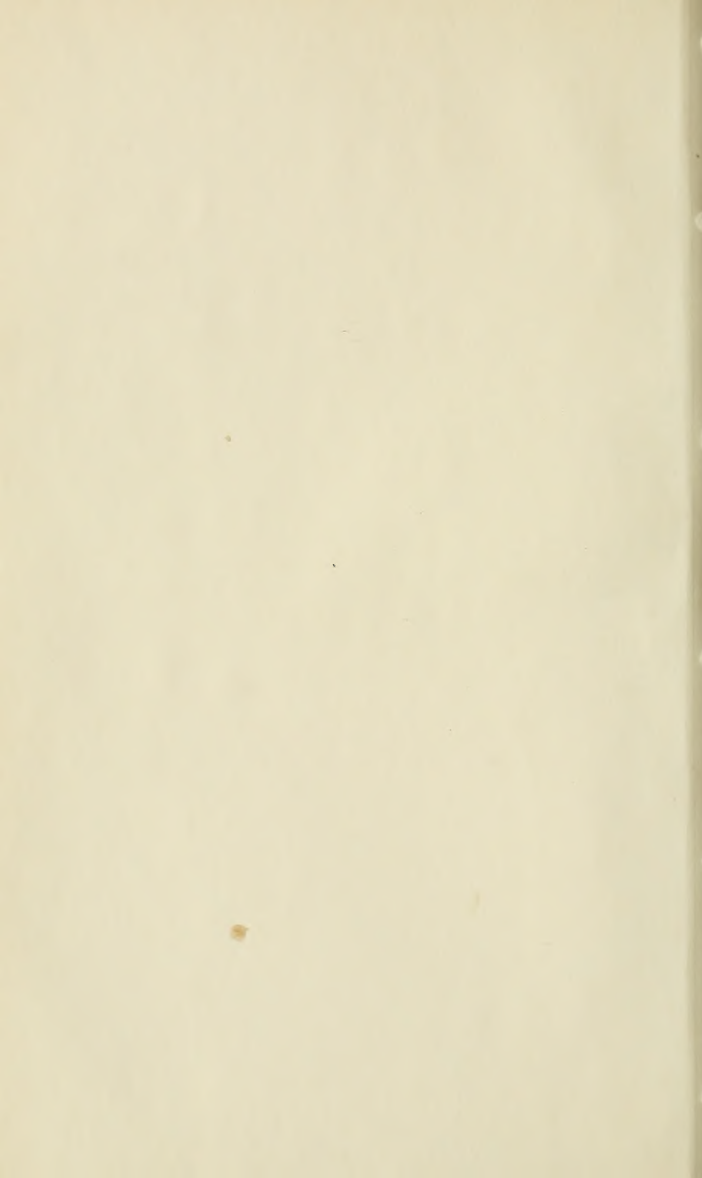




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ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Note on the Mode in which Compensation is Established in Cases of Aortic Incompetence.* By GEORGE W. BALFOUR, M.D., Physician to the Royal Infirmary.

It is impossible to have any clear ideas as to the manner in which aortic disease progresses, its probable duration, or its treatment, without a thorough knowledge of the physical agencies implicated in that progression, and the mode in which the heart is enabled to resist them. Following Stroem,¹ Thibesius,² and Brücke,³ I formerly supposed that the heart was flushed with arterial blood only during the diastole, for these reasons:—1st, because the blood-current flows at right angles to the orifices of the coronary arteries, so that only a small portion of the systolic wave could be supposed to enter them; 2d, because the ventricular tissue is so firmly contracted as still further to limit the systolic supply; and 3d, because in a considerable number of individuals the coronary arteries open so far within the valvular zone, that at the moment of ventricular systole their orifices are closed by the segments of the aortic valve thrown back on the wall of the artery by the advancing blood-wave, so as to shut off completely the possibility of any systolic flushing. These reasons, if correct, are sufficient

¹ Haller, *Elem. Physiol.*, vol. i. lib. iv. s. v. §§ 18, 19. Lausannæ, 1757.

² *Dissertatio Med. inaug. de circulatione sanguinis in corde.* Lugd. Batav. 1708, §§ 24, 25.

³ *Physiologische Bemerkungen ueber die Arteriæ Coronariæ Cordis.* Sitzb. d. K. K., Acad. der Wiss. zu Wien, Cl. Bd. xiv., 1854, s. 345.

to justify the postulate started with. But Gaskell¹ has shown that even tetanic muscular contraction favours the arterial blood-flow through it, instead of obstructing it. Hyrtl² has shown, from a special examination of 117 bodies, that in the greater number the orifices of both coronaries are above the free margin of the semilunar valve, and that one at least always is so. He also states, as the result of numerous experiments on rabbits, cats, and dogs, that section of the coronary arteries is invariably followed by an intermittent blood-spurt co-incident with the systole of the ventricle, and this he thinks conclusively proves that closure of the coronaries by the segments of the aortic valve cannot exist.³ By a reference to the physics of the valve segments themselves, and also of the blood-current, Ceradini has shown that the valve segments are not closely applied to the arterial wall during the ventricular systole, but float in an intermediate position, maintained in equilibrium by the central or axial stream on the one hand, and on the other by reflux currents which, originating at the exterior of the axial stream, flow outwards and downwards against the arterial wall, and are reflected from it upon the posterior surface of the segments of the aortic valve.⁴ These statements seem conclusively to prove that the coronary arteries are patent to the blood-flow during the ventricular systole; and when we reflect that the coronaries are flushed not merely by a reflux current of unknown value, but, through the influence of Pascal's law, by a blood-current having the minimum aortic pressure of 200 m.m. Hg., we see that the cardiac muscle is freely supplied with highly oxygenated and nutritive blood at the very moment when it requires it most, when the transformation of energy, from potential to kinetic, within its substance is at its height. And this is in complete consonance with the fact that, except in very advanced cases of long standing, or where other causes have also been at work, the heart in aortic incompetence is always found to be well-nourished and free from signs of degeneration. It also explains the remarkable fact that sufferers from aortic disease are not necessarily shortlived; from causes which shall be presently explained, they are certainly liable to sudden death in a higher ratio than other men, but they often lead useful and wonderfully long lives, quite unconscious of the existence of any serious disease. To others the signs, or some of them at least, may be apparent enough; they themselves are quite unconscious of anything but the fullest vital vigour. One of the most remarkable instances of this which I have ever seen, was that of

¹ Ludwig's *Arbeiten*, 1876; *Journal Anat. and Phys.*, xi. 360.

² *Beweis dass die Ursprünge der Coronar-Arterien während der Systole der Kammer von den Semilunar Klappen nicht bedeckt werden.*, u.s.w. Sitzb. d. K. K., Akad. d. Wiss. Cl. Bd. xiv. s. 373.

³ *Ueber die Selbststeuerung des Herzens, ein Beitrag zur Mechanik der Aorta Klappen.* Wien, 1855, s. 59, ff.

⁴ *Der Mechanismus der halbmondförmigen Herzklappen.* Leipzig, 1872.

a clergyman who had his first and only attack of acute rheumatism thirty-four years before he consulted me. His disease when I saw him first was evidently far advanced, and only too surely approaching its termination, yet he assured me that till two or three months previously he had been perfectly unaware that anything ailed him. He was a married man with a family, and knew that all his life his heart had beat stronger than other hearts did, but he rather regarded this as a sign of vigour than the reverse. Over exertion at lawn tennis precipitated the break down of his compensation, which was too near its natural close to permit of recovery, and he died three months after I first saw him. I have seen many similar cases, but none in which the history was so distinct, or the period between beginning and end quite so long, yet he was a man who discharged faithfully all the duties of his station, and took his share of such minor athletics as lawn-tennis, curling, etc. Indeed, such patients are largely exempt from the troubles that afflict those labouring under mitral disease; the frequent attacks of bronchitis, of dropsy to a greater or less extent, or the multiform uneasiness entailed by cardiac weakness, from which mitral patients suffer so much and so often, are all unknown to those labouring under aortic incompetence. It is well it is so, for such accidents are of much more serious import in the latter class of cases than in the former. The special immunity from cardiac symptoms enjoyed by those labouring under well-compensated aortic incompetence has been also noted by Niemeyer, who says that "such persons are frequently not even short of breath—a symptom never missed in cases of mitral disease."¹ And he makes special mention of a huntsman from Greifswald, who, though labouring under extensive stenosis and incompetence of the aortic valve, with immense eccentric hypertrophy of the left ventricle, was yet able to go through all the manœuvres and forced marches of the Franco-Prussian war without difficulty;² and there is no difficulty in either understanding or believing this remarkable immunity if we consider the manner in which the heart is nourished, and the mode in which compensation is established. Now and then it happens that a morbid anatomist holds up a heart and allows us to see water trickling through an aortic valve, the incompetence of which had not been detected during life. There is no need to be ashamed of this, for a certain force of stream is requisite to produce a fluid vein, and without a fluid vein there can be no murmur to aid us in making our diagnosis. But the crumpling of a rheumatic valve goes on so slowly that I myself see no reason to doubt that leakage has been long established before it attain force enough to reveal itself by a murmur. During all this time that the leakage has been imperceptibly advancing to its full development, dilatation of the

¹ *A Text-Book of Practical Medicine.* London, 1871. P. 347.

² *Loc. cit.*

left ventricle with compensatory hypertrophy have been equally gradually brought about through the agency of the physical and pathological laws formerly referred to,¹ so that we never hear a murmur of aortic incompetence without, at the same time, being able to detect some degree of eccentric hypertrophy of the left ventricle. Where the disease is arterial in its origin, and depends primarily on aortic dilatation, accentuation of the aortic second often long precedes any other sign, and it may even be associated with a systolic murmur of aortic origin for an indefinite period before the development of the signs of aortic patency, as has been pointed out by Stokes, who distinctly recognised these signs as early indications of a progressively advancing incompetence,² which probably begins as slowly and as imperceptibly as in the rheumatic heart. Even where incompetence is suddenly developed by rupture of one of the aortic cusps, there is no reason to suppose that the accident is always attended by serious disturbance of the circulation. At least, I have occasionally observed cicatrices at the root of depressed and incompetent cusps, where there was no history of any sudden disturbance, and where circulatory troubles have only arisen after an indefinite period of calm following an accident, to which the rupture of the cusp seemed to be due. It is true this is not always the case, and in some these troubles arise quickly and rapidly progress to their close, but the reason for these would seem rather to depend on the preceding state of the cardiac muscle than on the nature or position of the lesion. Rosenbach³ has shown that when the aortic valves of healthy animals are suddenly destroyed there is no intermediate period, however short, of cardiac disturbance, but that the heart at once adapts itself to its altered condition, without a trace of any fall in the arterial blood-pressure, such as must have been observed had there been but a second's falter on the part of the heart. The dilatation⁴ necessitated by the overfilling of the left ventricle into which blood flows from two sources instead of one, is provided for by the natural elasticity of the ventricular walls, and the increased power needed to expel the surplus blood is readily supplied by the reserve force of the heart, an organ which in health has always a considerable margin of latent energy upon which the maintenance of life itself depends in many morbid conditions. Under the influence of Paget's law the ventricular muscle slowly hypertrophies, and the reserve

¹ *Ed. Med. Journal*, Feb. 1875, p. 712.

² *Diseases of the Heart and Aorta*. Dublin, 1854. P. 227.

³ *Ueber artificieller Herzklappenfehler*. Von Dr Ottomar Rosenbach. *Archiv für experimentelle Pathologie und Pharmacologie*. Leipzig, 1878. S. 1.

⁴ Rosenbach has fallen into the mistake of supposing that this dilatation differs in character from that occurring in other circumstances, stating that while in this disease dilatation precedes hypertrophy, in other forms hypertrophy precedes dilatation, *op. cit.*, S. 12. The only differences are those of degree; the mode of production is essentially the same in all cases.

energy is gradually supplemented and ultimately replaced by an actual increase of muscular force. In this way dynamic compensation is for long efficiently maintained, but perfect structural compensation is never attained, the hypertrophy always lags behind the dilatation. By adopting Ceradini's view of the mode in which the heart is nourished, we can readily understand how this imperfect structural compensation may long preserve its dynamic perfection, ever slowly advancing towards its natural termination when the hypertrophy has outgrown the feeding powers of the coronary arteries. Then the heart ceases to grow stronger, and if its walls still grow thicker this is due to venous congestion and the development of fibrous tissue; dilatation rapidly advances, by-and-by the segments of the mitral valve cease to meet, mitral regurgitation is established, and if the patient is spared so long, though still liable to death from sudden asystole, the natural termination of his disease is now gradual asthenia and dropsy. This is the normal history of aortic incompetence, and it may embrace a period of not less than thirty-five years, though from the numberless accidents which may rupture the dynamic compensation, it is seldom permitted to last so long. Rosenbach has experimentally demonstrated the truth of the mode of progression in aortic disease which I believe I was the first to propound,¹ but Ceradini's explanation of the manner in which the heart is nourished is even more important, as it affords an intelligible explanation of the way in which the heart is enabled to carry on its function, apparently unimpaired, in spite of the existence of serious valvular lesion. The history of aortic regurgitation is well fitted to awaken in our minds the highest respect for the recuperative power of the heart, even when irretrievably injured. It also teaches us the unadvisability, to say the least of it, of treating a disease of this character with only signs and no symptoms, clearly showing that in these cases our duty is to watch and wait, carefully avoiding the *nimia diligentia*, yet prepared at any moment to act with energy and firmness.

ARTICLE II.—*Paucity and Adolescence Medico-Psychologically Considered.* By T. S. CLOUSTON, M.D., F.R.C.P.E., F.R.S.E., Physician-Superintendent, Royal Edinburgh Asylum, Lecturer on Mental Diseases in the University of Edinburgh.

WHEN one considers the enormous differences in the physiological life and prevailing brain activity of the same human being at the different periods of life, it does not seem wonderful that each period has its own type of psychological disturbances, just as it has its special kinds of ordinary disease. Indeed, it would be very wonderful if the brain of a child, whose chief characteristics are active

¹ *Ed. Med. Journal*, Feb. 1875, p. 709, etc.

development, intense inquisitiveness in all directions, great sensitiveness to impressions, which succeed each other rapidly, and, whether they are painful or pleasurable, leave only slight lasting traces, if this organ manifested quite the same disturbances when its mental functions become deranged as the brain of an old man, whose chief characteristics are retrogression in all its activities, and insensitiveness to ordinary impressions. The essential qualities of the two organs are in many respects different: their receptive, dynamical, and trophic activities are quite dissimilar. Then what a change in the mental activity of the brain does the period of puberty cause! Looking at the matter from the combined point of view of physiologists and psychologists, we must connect the new development of the affective faculties, the new ideas, the new interests in life, the new desires and organic cravings, the new delight in a certain sort of poetry and romance, with a new evolution of function in certain parts of the brain that had lain dormant before. This awakening into intense activity of such vast tracts of encephalic tissue, though provided for in the evolution of the organ, does not take place without much risk of disturbance to its mental functions, especially where there is an inherited predisposition in that direction. And if this predisposition is thus developed into actual derangement of function, it happens, as might have been surely predicated *a priori*, that the type of derangement is much influenced by the great function of the reproduction of the species then arising *de novo*. To form a right conception of the kinds of mental disease that occur at the various important periods of life it is essential that we consider them in connexion with the normal changes that take place in the organism at these periods, with the normal modifications in the mental energy at those periods, and with the changes that take place in the brain texture and mode of action, so far as we know them. In short, we must take a physiological view of mental disease.

The Period of Puberty or Pubescence.—The period of puberty is the next great physiological era in the life of man after that of birth. Before that occurs the whole trophic and mental energy has been occupied in acquisition alone. There has been no production. Before that time there has been a general psychical likeness between individuals of the same and of opposite sexes which then rapidly disappears. Individualities of all kinds spring up far more decidedly at that time in those of the same sex; while, dividing the sexes at this time, there arise most striking psychical differences that far exceed the bodily contrasts. Up to that time the mental development towards the ideal standard of psychical energy has been very equal in either sex; after puberty that development takes place in the man far more in the direction of energizing and cognition, in the woman in the direction of emotion and the protective instincts. But these changes don't ordinarily take place all at once in the human species, any more than a full

capacity for reproduction takes place in either sex immediately the testes assume their function, or menstruation and ovulation are set up. It takes several years for the full development of the size and form of the body that is normal and typical for each sex, and it takes still longer for the complete evolution of the masculine and feminine psychical characteristics. It is not at the time of the first appearance of the reproductive function chiefly that there is peril to the healthy mental balance, but those years of gradual coming to maturity are full of danger to the mental health of both sexes. It cannot be otherwise. The hereditary influences and tendencies that all the former generations have transmitted to a man come then most fully into play. And when we consider for a moment that it is not only his father's and his mother's own inherited tendencies that may come to him, but their acquired peculiarities as well, and not only so, but the inherited and acquired peculiarities of his four grandparents and his eight great-grandparents, not to go any further back, how great a risk does every man and women run of suffering for the sins of their fathers! Maudsley speaks of a man's yielding to the tyranny of his organization. We might go further, and say he may fall a victim to his grandfather's excesses. Most fortunately for the race, there are other laws obviating such effects of heredity. One is that the tendency towards reproducing the normal and healthy type is always stronger than towards the abnormal. If the conditions of life are favourable, mere tendencies never develop, and potentialities never become actualities. The other is, that when the tendency to abnormality is strong the victim of it dies before the age of reproduction, or he is incapable of procreation. Now, the insanity of puberty is always a strongly hereditary insanity; it, in fact, never occurs except where there is a family tendency towards mental defect or towards some other of the neuroses. Its immediate cause may be some irregularity in the coming on of the reproductive or menstrual function; its real and predisposing cause is heredity, having for its object this higher physiological law, that the reproduction of the species is stopped when the inherited tendency to brain disease acquires a certain strength in any individual.

I cannot help here adverting to the absurd and unphysiological theories of education which are sometimes taught, and which we as medical men should combat with all our might. The old practice of attending to the acquisitive and mnemonic faculties of brain alone in education is now fortunately giving way. The theory of any education worth the name should be to bring the whole organism to such perfection as it is capable of, and to train the brain power in accordance with its capacity, most carefully avoiding any overstraining of weak points; and an apparently strong point in the brain capacity of a young child may in reality be its weakest part from hyper-activity of one part. I have known a child with an extraordinary memory at eight who at fifteen

could scarcely remember anything at all. Then, as the age of puberty approaches, one would imagine, to hear some scholastic *docteurs* talk, that it was the right thing to set ourselves by every means to assimilate the mental faculties and acquirements of the two sexes, to fight against nature's laws as hard as possible, and to turn out psychically hermaphrodite specimens of humanity by making our young men and women alike in all respects, to make our girls pundits and doctors, and our young men mere examination-passers. If there is anything which a careful study of the higher laws of physiology in regard to brain development and heredity is fitted to teach us, it is this, that the forcing-house treatment of the intellectual and receptive parts of the brain, if it is carried to such an extent as to stunt the trophic centres and the centres of organic appetite and muscular motion, is an unmixed evil to the individual, and still more to the race.

Some educationalists go on the theory that there is an unlimited capacity in every individual brain for education to any extent, in any direction you like, and that after you had strained the power of the mental medium to its utmost, there is plenty of energy left for growth, nutrition, and reproduction. Nothing is more certain than that every brain has at starting just a certain potentiality of education in any one direction and of power generally, and that it is far better not to exhaust that potentiality, and that if too great calls are made in any one direction it will withdraw energy from some other portions of the organ. These persons forget that the brain, though it has multiform functions, yet has a solidarity and interdependence through which no portion of it can be injured or exhausted without in some way interfering with the functions of the other portions. Even the very anatomical and histological composition of the organ might teach us this. The way in which its several elements that minister to mental functions, motion, sensation, regulation of temperature, and nutrition, are mixed up in the cortex, and even in the centres lower down, have as yet defied our anatomical and physiological investigations even to distinguish the one clearly from the other. To say that any one man could have the biceps of a blacksmith, the reasoning powers of a Darwin, the poetic feeling of a Tennyson, the procreative power of a Solomon, and the longevity of a Parr, is simply to state a physiological absurdity. As Mr G. H. Lewis¹ says, "Owing to the action and reaction of blood and plasmode, of tissues on tissues, and organs on organs, and their mutual limitations, the growth of each organism has a limit, and the growth of each organ has a limit. Beyond this limit no extra supply of food will increase the size of the organism, no increase of activity will increase the power of the organ,—Man cannot add a cubit to his stature. The blacksmith's arm will not grow larger by twenty years of daily exercise after it has once attained a certain size." The possible extent of development of every brain and of every function in any

¹ *Physical Basis of Mind*, p. 184.

one brain is just as much confined by limitations as the size of the blacksmith's arm, and physiology teaches us that no organ or function should be worked even up to its full limit of power. No prudent engineer sets his safety-valve just at the point above which the boiler will burst, and no good architect puts weight on his beam just up to the calculation above which it will break. Nature generally provides infinitely more reserve power than the most cautious engineer or architect. She scatters, for instance, seeds in millions for hundreds to grow, and she is prodigal of material and strength in the heart and arteries beyond what is needed to force the blood-current along; therefore we have no reason to think that any function of the brain should be strained up to its full capacity except on extreme emergencies, or that any of the receptive or sensory brain-tissues should be stored choke-full of impressions for the purpose of being frequently called up again as representations. Especially do those principles apply if we have transmitted weaknesses in any function or part of the organ; and what child is born in a civilized country without inherited brain weaknesses of some sort?

These principles also apply, I believe, most strongly to the whole reproductive functions of the body and its centres in the brain, both in the male and the female. Especially are they applicable in the case of the female organism, on which the chief strain of reproducing the species rests. The risks to the mental functions of the brain from the exhausting calls of menstruation, maternity, and lactation, from the nervous reflex influences of ovulation, conception, and parturition, are ruinous if there is the slightest original predisposition to derangement, and the normally profound influences on all the brain functions of the great eras of puberty and the climacteric period are too apt, in these circumstances, to upset the brain stability. Beyond all doubt, boarding-school education has not as yet been conducted on physiological principles, and is responsible for much nervous and mental derangement, as well as for difficult maternity; but if the education of civilized young women should become what some educationalists would wish to make it, all the brain energy would be used up in cramming a knowledge of the sciences, and there would be none left at all for trophic and reproductive purposes. In fact, for the continuance of the race there would be needed an incursion into lands where educational theories were unknown, and where another rape of the Sabines was possible. American physicians tell us that there are some schools in Boston that turn out young ladies so highly educated that every particle of their spare fat is consumed by the brain-cells that subserve the functions of cognition and memory. If these young women do marry, they seldom have more than one or two children, and only puny ones at that, whom they can't nurse, and who either die in youth or grow up to be most feeble-

minded folks. Their mothers had not only used up for another purpose their own reproductive energy, but also most of that which they should have transmitted to their children; nature, no doubt, making provision for the transmission of the unused-up energy of one generation on to the next, on the principle of the conservation of force. As physicians—the priests of the body and the guardians of the physical and mental qualities of the race—we are, beyond all doubt, bound to oppose strenuously any and every kind and mode of education that in any way lessens the capability of woman for healthy maternity, and the reproduction of future generations strong mentally and physically. The relation of the psychical and emotional development to the generative function is full of interest and importance to us as physiologists, and few men have been long in practice before such questions obtrude themselves as very practical ones indeed. The first hysterical girl a man has to treat in a good family where he does not want to lose the case or the family practice, may test severely his knowledge of the reflex relationship of the uterus with the sensory, motor, and mental functions of the brain. We must, as much as we can, account for phenomena of all kinds. It is a mere cloak for ignorance, and an excuse for not thinking, to call certain abnormal phenomena “hysterical,” and imagine that explains them. It does not require much consideration to see that at the period of puberty in both sexes, but especially in the female, the direct connexion of certain physiological functions and processes with certain mental facts influences the whole life of the individual. If that connexion is in any way abnormal, we have great strains on the mental functions of the brain, and sometimes actual derangement. Our high civilisation and refinement, no doubt, add immensely to the risks by increasing the strain. The psychological analysis of what female modesty is, by a physiologist, reveals the transformation and apotheosis in the higher regions of the brain of reflex impressions from the reproductive organs into a high moral quality, not only beautiful, but absolutely essential to social life. How can a physician understand the true import of the obtrusive and grotesque modesty of a hysterical patient except he takes this into account? The intense and complete outward repression and inhibition of certain physiological cravings required by our morals and our civilisation causes, no doubt, a dangerous strain on the brain functions, and a reaction in other directions, where there are hereditary neurotic weaknesses.

Puberty is the first really dangerous period in the life of both sexes as regards the occurrence of insanity: but it is not nearly so dangerous as the period of adolescence, a few years afterwards, when the body, as well as the functions of reproduction, has more fully developed. The nutritive energy of the brain is so great in youth, its recuperative power so vigorous, and its capacity for rest in sleep so powerful, that its mental functions are not often upset at this period. To bring out this fact statistics are useful. In

Scotland, at the present time, nearly one-half the population are under the age of 20; while in the Royal Edinburgh Asylum we have, out of a total of 730 patients, only 10 under that age. The contrast between 50 per cent. and 1.5 per cent. in the sane and insane populations is a very marked one. But, to show how different is the state of matters in the older periods of life, let us compare the number of persons over 60 in Scotland and in the Asylum. In the general population there are just about 8 per cent. over that age, while in the asylum, out of the 730, there are no less than 126, or 17 per cent. Or, to bring out the facts differently, it is found that the number of people so insane as to require to be sent to asylums is about one in 600 of the population. Now, at this rate our 730 inmates represent an ordinary population of 438,000. One-half of these, or 219,000 persons, are 20 years of age or under, and they have only supplied ten of our lunatics, insanity occurring in them at the rate of only one in 21,900, while the remaining half of the general population, that over 20, had produced 720 lunatics, or one in 304, that is, in seventy times the proportion of those under 20 years of age. After the age of 20 there is no such enormous disproportion in the production of lunacy. It is undoubtedly most frequent between the ages of 35 and 55. Speaking generally, therefore, insanity in its worst forms is not a disease of youth or puberty, but of middle and advanced life. Slight attacks of nervous and mental derangement, however, that do not require asylum treatment, are by no means uncommon in those predisposed to the neuroses at the earlier ages, especially in the female sex; and if the general health and strength and nutrition are poor, puberty is very apt to cause neurotic symptoms in those cases. Such symptoms, if there is an inherited predisposition to insanity, should by no means be despised. They may develop into actual insanity at a later period. For the production of decided insanity requiring asylum treatment at the age of puberty we must, as I said, have a strong neurotic predisposition, as well as the advent of the reproductive era and the changes it brings along with it. I have scarcely ever met with a case without this. Other affections of the nervous centres are very apt to appear at this period of life, notably the two great derangements of the motor centres, epilepsy and chorea. The motor centres are, no doubt, more unstable and easily upset in their working in youth than either the mental, sensory, or trophic centres. Infantile convulsions are *the* nervous disease of infancy. I believe that if there is a hereditary predisposition to any neurosis whatever in infancy, it nearly always shows itself in a special tendency to infantile convulsions during dentition. We find that the majority of cases of epilepsy and chorea in the female begin at the period of puberty. The insanity of puberty in both sexes is characterized especially by motor restlessness. Such patients never sit down by night or day, and never cease moving. There is noisy and violent action, sometimes irregular movements or, in the few melancholic

forms and melancholic stages of the maniacal cases, cataleptic rigidity. The mental symptoms consist most frequently of a kind of incoherent delirium rather than any fixed delusional state. In boys the beginning of an attack is frequently ushered in by a disturbance in the emotional condition, dislikes to parents or brothers or sisters expressed in a violent, open way; there is irrational dislike to and avoidance of the opposite sex. The manner of a grown-up man is assumed, and an offensive "forwardness" of air and demeanour. This soon passes into maniacal delirium, which, however, is not apt to last long. It alternates with periods of sanity, and even with stages of depression.

Adolescence.—The mental disturbance characteristic of this period is closely allied to that which occurs at puberty. It occurs later, between the ages of 18 and 25, notably between 20 and 25, when the function of reproduction is attaining its full development and the body is arriving at its full growth. That there is such an era in life physiologically is sufficiently proved by the existence in all languages of a word to signify the same thing as our "adolescence." I cannot hope to change the accepted meaning of the present nomenclature, but I would, if I could, distinguish between puberty and adolescence in this way—I should restrict puberty, as is now done when the term is used in a scientific and physiological sense, to the initial development of the function of reproduction, to its first appearance as an energy of the organism; while I should use adolescence to denote the whole period of twelve years from the first evolution up to the full perfection of the reproductive energy, when the bones are all finally consolidated, and the full growth of the beard and the sexual hair, and the perfect assumption of the manly form in the male sex, and the full development of the adipose tissue and the mammae give the female form its perfect grace of contour.

"Dr Matthews Duncan has proved statistically that in the female sex 'the climax of initial fecundity,' which may be taken as proof of full development 'is about the age of twenty-five years.'¹ This may be assumed to be the case for both sexes.

"Looked at from a psychological point of view, it cannot be denied by any one that the latter years of adolescence are far more important than the first. For years after puberty boys and girls are still boys and girls in mind, but as a physiological fact the female sex attains its full bodily development first. At twenty-one the great majority of that sex have attained perfect physiological development, and Duncan's statistics show that their initial fecundity is then almost at its climax. But this is not so in the male sex. The growth of the beard and the form of the body do not reach full development in that sex on an average till the age of twenty-five. Mentally the difference is still more marked, I believe. The subtle but profound mental influences of adolescence have usually reached their full maturity in women three or four years before men."²

A careful study of human nature will soon show any observer that the period of adolescence in this sense is a most momentous

¹ *Fecundity, Fertility, and Sterility*, 2d ed. p. 33.

² See July number, 1879, "The Study of Mental Disease," by the author.

one. The mental change that takes place from 18 to 25 is incomparably more important, and I think more interesting psychologically too, than that which occurs between 14 and 18. The psychological change at puberty is, no doubt, great from childhood; but it is inchoate and nascent; it wants precision and conscious power; its emotionalism is utterly spasmodic and childish; its sentiment altogether wants tenderness, and its ambitions and longings are mere castle-building in the air.

At adolescence in the male sex life first begins to look serious, both from the emotional side and in action. It is then only that childish things are put away. For the first time literature in any correct sense is appreciated. Poetry, not even understood before, now becomes a passion, at least certain kinds of poetry. Not that the highest kind of literature is reached. No adolescent ever really appreciated, or even thoroughly liked, Shakespeare. That is reserved for full manhood. The kind of novel that is enjoyed is always a good test of the mental and emotional development. The boy enjoys *Balkortyne* and *Marryat*; G. P. R. James begins to have a dim meaning to the youth; at puberty the adolescent takes to Scott, Dickens, and Miss Austin; while only the man enjoys and understands Shakespeare, George Eliot, and Thackeray. Go into a university and watch the demeanour of the first and fourth year's man, if any one has any doubt as to the immeasurable distance between puberty and adolescence. There seems to be a great gulf fixed between them. The fourth year's man treats his junior not as a mere junior, but as of a different and inferior species. He never speaks to him if he can help it; he would no more room with him than he would with a baby in arms. Watch the two in the presence of the opposite sex. Their behaviour is quite different. In the one case you see mere shyness, that breaks out into rollicking fun the moment a real acquaintance is formed; in the other there is real sexual egoism, that most painful pleasure that consists of the half unconscious organic feeling that each person of one sex is an object of the most intense interest to each person of the opposite sex about the same age. The real events and possibilities of the future are reflected in vague and dreamlike emotions and longings, that have much bliss in them, but not a little, too, of seriousness and difficulty. The adolescent feels instinctively that he has now entered a new country, the face of which he does not know, but yet that is full of possibility of good and happiness for him. He has a craving, too, for action of some sort—not merely the football action of the boy, but something of more serious import. Longfellow's youth that vaguely cried "*Excelsior*" was evidently at this stage of life. His reasoning faculty first gets some backbone at this period. His emotional nature acquires for the first time a leaning towards the other sex that quite swallows up the former emotions. It is not yet at all under his control, fixed or definite in its aims. His sense of the seriousness and responsibility of life may be said to awake then for the first time in a real sense. Tho

first sense of right and wrong and of duty becomes then more active instead of passive. He has yearnings after the good, and is capable of an intense hatred and scorn of evil which he could not have experienced before.

But it is in the female sex that the period of adolescence has attracted most attention, especially among those psychological students and delineators of character, the novelists of the day. As physicians, we know that it is only then that hysteria, migraine, and the graver functional and reflex neuroses arise. As men of the world, we know that the love-making, the flirting, the engagements to marry, and the broken hearts of the adolescents are not really very serious affairs. The cataclasm of life don't happen then. We know that no artist ever painted, or no sculptor ever modelled, a Venus who had not passed adolescence. The very finest and most interesting study of adolescence in the female sex is, in my opinion, to be found in the Gwendolen Harleth of George Eliot's novel of *Daniel Deronda*. This authoress is by far the most acute and subtle psychologist of her time, and certainly the character I have mentioned is most worthy of study by all physicians who look on mind as being in their field of study or sphere of action. From the time when, at the gaming-table, Gwendolen caught Deronda's eye, and was totally swayed in feeling and action by the presence of a person of the other sex whom she had never seen before, playing, not because she liked it or wished to win, but because he was looking on, all through the story till her marriage, there is a perfect picture of female adolescence. The subjective egoism tending towards objective dualism, the resolute action from instinct, and the setting at defiance of calculation and reason, the want of any definite desire to marry, while all her conduct tended to promote proposals, the selfishness as regards her relations, even her mother, and the organic craving to be admired, are all true to nature. Witness her state of mind when Grandcourt first appeared:—

“Hence Gwendolen had been all ear to Lord Brackenshaw's mode of accounting for Grandcourt's non-appearance; and when he did arrive, no consciousness was more awake to the fact than hers, although she steadily avoided looking towards any point where he was likely to be. There should be no slightest shifting of angles to betray that it was of any consequence to her whether the much-talked-of Mr Mallinger Grandcourt presented himself or not. And all the while the certainty that he was there made a distinct thread in her consciousness.”

Again:—

“Gwendolen knew certain differences in the characters with which she was concerned as birds know climate and weather.”

The sentimentality of this period of life is well illustrated when Gwendolen says—

“‘I never saw a married woman who had her own way.’ ‘What should you like to do?’ said Alex, quite guilelessly, and in real anxiety. [He was an adolescent just entering on the period.] ‘Oh, I don't know! Go to the North Pole, or ride steeplechases, or go to be a queen in the ball, like

Lady Hester Stanhope,' said Gwendolen, lightly. 'You don't mean you would never be married.' 'No, I didn't say that. Only, when I married, I should not do as other women do.'

The inchoate religious sentiment, as a psychological faculty contending with the egoism, is thus brought out:—

"What she unwillingly recognised, and would have been glad for others to be unaware of, was that liability of hers to fits of spiritual dread. . . . She was ashamed and frightened as at what might happen again, in remembering her tremor on suddenly finding herself alone. . . . Solitude in any wide scene impressed her with an undefined feeling of immeasurable existence aloof from her, in the midst of which she was helplessly incapable of asserting herself. With human ears and eyes about her she had always hitherto recovered her confidence, and felt the possibility of winning empire."

The craving for notice is thus hit off:—"I like to differ from everybody. I think it is so stupid to agree."

"Her thoughts never dwelt on marriage as the fulfilment of her ambition. . . . Her observation of matrimony had induced her to think it rather a dreary state, in which a woman could not do as she liked, had more children than were desirable, was consequently dull, and became irrevocably immersed in humdrum. Of course marriage was social promotion. She could not look forward to a single life. . . . She meant to do what was pleasant to herself in a striking manner; or rather, whatever she could do so as to strike others with admiration, and get in that way a more ardent sense of living, seemed pleasant to her fancy."

But extracts merely spoil the whole picture, which is one that is in perfect accord with the facts of nature, drawn by a consummate artist. It is one of the most perfect psychological studies with which I am acquainted.

It seems like passing from the poetry of science to Dryasdust's details, to descend from George Eliot's word-pictures to the details of physiological fact and speculation that underlie all this charming maiden's mental constitution. I think most medical men of extensive observation would agree with me, that the incompleteness of those mental tokens of merely developing womanhood and manhood during the period of adolescence do indicate that the conditions under which the reproduction of the species takes place should be deferred till adolescence has passed. The love-making of adolescence is not the serious matter it should be, as Gwendolen's history well shows; and therefore, the full physiological and psychological conditions for dualism not being there, it should not be encouraged. All serious love-making, engagements to marry, too free intercourse with the other sex, too much dancing, too much going into society, merely tend to force on the full development, like young plants in a hothouse, with the result that the flowers and fruits have a tinge of artificialness, don't last, and don't stand the same tear and wear. A young man who marries before his beard is fully grown breaks a law of nature and sins against posterity. A girl who gets engaged while in Gwendolen's state of mind is not likely to derive all the happiness in marriage of which she is capable. It follows, therefore,—and most members of our profession would,

I think, agree with me,—that sexual intercourse should not be indulged in till after adolescence. The period of adolescence is very liable to those psychological cataclisms in weak brains, attacks of mania, that have a special relationship to the function of reproduction. Especially it seems to me that the periodicity and remission of the *nisus generativus* in both sexes, and the menstrual periodicity which accompanies it in females, is reflected in a periodicity and tendency to remission in the insanity that occurs during adolescence. For the statistical results of an investigation into the prevalency, characters, and prognosis of the "Insanity of Adolescence," I must refer to the July number of this journal for 1879 (pp. 19–24).

Treatment of the Insanity of Adolescence.—The treatment I have lately adopted for such cases I endeavoured to found on physiological considerations. The completion of the period of adolescence is in both sexes accompanied by a considerable deposit of adipose tissue, by strength and vigour, and a state of general good nourishment of the body. To attain to this normal condition of body should undoubtedly be our aim in treating all cases of mental disease at this period. It always seemed to me that there were two things that constantly worked the other way, and that I had to contend against in their treatment. These were the general brain excitability and the morbid strength, and often perversion, of the generative *nisus*. The one tended to mania, sleeplessness, purposeless motor action, thinness, and exhaustion; the other to erotic trains of thought, sexual excitement, and masturbation. I found that inaction, reading, indoor life, and amusements increased the one, while novel-reading, solitariness, and long hours in bed aggravated the other, and animal food and alcoholic stimulants gave increased strength to both morbid tendencies. I therefore put my patients to active exercise in the open air for as many hours a day as possible, walking, digging in the garden, wheeling wheelbarrows; give them shower-baths in the morning when the weather is suitable and they are strong enough, and encourage active muscular exercise in every way. Athletic games of all sorts in the open air are certainly good so far as they go. But I place my chief reliance on the diet. Milk in large quantity, and as often in the day as possible, bread, porridge, and broth, are the staple articles of food for such patients here. My friend Dr Keith of this city was the first to direct my attention to the advantage of a light, farinaceous, and milk diet in another class of cases, and my experience is strongly in favour of his views. The patient may have some fish, or fowl, or eggs, but in reality milk is the sheet-anchor of treatment. I never give such cases alcoholic stimulants. I give to all such patients who can take and assimilate it easily an emulsion of cod-liver oil, hypophosphite of lime, and pepsine, made and flavoured in such a way that it resembles cream. I find very few indeed who can't take this. Beyond this, an occasional bitter tonic is about all the medicine I give. The effect of this

diet, regimen, and treatment is most marked in the majority of cases. No doubt, during the first part of the attack the patients may lose weight while the excitement is in its most acute stage; but they soon begin to gain weight, and my prognosis is always favourable when I find a patient beginning to gain weight within a reasonable time, say three months or so. I have had patients who, in spite of very sharp excitement indeed and much sleeplessness, gained weight. It seems to me that the process of fattening such a patient, and the condition under which it takes place, are antagonistic to the disease and its results. I have known the stopping of the cod-liver oil to be followed at once by a loss or diminished gain in weight, and its resumption to be followed by the former rate of increase. If a young man or woman suffering under the insanity of adolescence is found to gain one or two pounds a week within the first three months, I look on him as quite safe. I have had a case gain a stone in a month.

I have not pursued this plan of treatment long enough as yet to yield large statistical results that could be properly relied on, but my impression so far is, that far more of the patients recover. They recover much sooner, and their recoveries are more reliable and permanent. Even in the case of those who sink into dementia, I think they do so more quietly and with less of the element of chronic mania than under a flesh diet. It is, I think, certain that the habit of masturbation, which is so frequent and so deleterious an element in such cases, is less practised by patients on this diet, and, when practised, is less damaging to brain function, and takes less hold on them.

Lastly, in connexion with this subject, I would say a word about prophylaxis in children with a strong neurotic inheritance. My experience is that such children who have the most neurotic temperaments and diatheses, and who show the greatest tendencies to instability of brain, are as a rule flesh-eaters, having a craving for animal food too often and in too great quantities. I have found, also, a large proportion of the adolescent insane had been flesh-eaters, consuming and having a craving for much animal food. My experience, too, is that it is in such boys that the habit of masturbation is most apt to be acquired, and, when acquired, seems to produce such a fascination and a craving that it ruins the bodily and mental powers. I have seen a change of diet to milk, fish, and farinaceous food produce a marked improvement in regard to the nervous irritability of such children. And in such children I most thoroughly agree with Dr Keith, who in Edinburgh for many years has preached an anti-flesh crusade in the bringing of all children up to eight or ten years of age. I believe that by a proper diet and regimen, more than in any other way, we can fight against and counteract inherited neurotic tendencies in children, and tide them safely over the periods of puberty and adolescence.

ARTICLE III.—*Notes of a Case of a Rare Form of Elephantiasis.*
By DAVID T. PLAYFAIR, M.B.

THE following case of elephantiasis, on account of its almost unique character, seems to me to be worth recording. The patient was well known to me for a considerable time before the onset of the affection, and his statements regarding the history of the disease may be relied on as being accurate. I have to express my thanks to Professor Grainger Stewart for his kindness in allowing me to make use of the notes of the case which I took when acting as clinical clerk under him in the Edinburgh Royal Infirmary, during the time the patient was under treatment there.

J. M., æt. 48, coachman, married, a native of the north of Scotland, came to me about March 1875, complaining of dyspepsia and diarrhoea. The latter was for a time checked under treatment, but neither it nor the dyspepsia were ever thoroughly got rid of, although various means of treatment, both dietetic and medicinal, were employed. Notwithstanding this, he went about his usual work, but seemed to be gradually losing flesh and getting weaker.

In June of the following year (1876) he complained of considerable aggravation of the dyspepsia and increase in severity of the diarrhoea, and I requested him to strip to the skin and let me examine him carefully. I then found him to be suffering from very advanced disease of the skin of the abdomen and perineum, which, he said, he "did not like" to tell me about before, and which he had kept quite secret even from his wife, "for fear it might annoy her."

He gave the following history of the onset of the affection:—Coincident with the occurrence of the dyspeptic symptoms in March 1875, he observed that the skin on the lower part of his belly was somewhat indurated, and was beginning to lose its natural flexibility. About three months afterwards (*i.e.*, June 1875) he says an "eruption" began to appear above the pubis, similar to what now exists. This consisted of clusters of hard, flattened, nodular masses, varying in size from a pea to a blackbird's egg, and arranged in broad, irregular, transverse bands, corresponding to the natural folds of the skin of the abdomen. They never at any time caused any itching, were of much the same colour as the natural skin, and entirely devoid of all hair—the hair gradually disappearing as the disease advanced. No febrile exacerbations occurring, the disease gradually spread to the surrounding skin—the induration of the subcutaneous cellular tissue always taking place before the nodular masses made their appearance.

Six months afterwards (*i.e.*, about January 1876) the disease had spread downwards to the inside of the thighs by the side of the scrotum and along the perineum towards the region of the anus, thus causing great uneasiness when at stool and when walking. About the beginning of May two large "tumours" began to form

one on each side of the cleft of the buttocks, close to the anus. The larger of them, shortly before the date of my examination of him, had begun to ulcerate (probably from pressure on it when patient attempted to sit) and to discharge a very fetid semipurulent fluid.

Patient never had any skin affection in his life before, except about 1865, when he says he had a "wart" at the back of his neck, similar in appearance to a nodule of the existing disease, which was removed when about the size of a walnut. No member of his family and none of his relations ever suffered from anything of the kind. No history of syphilis. Patient is an exceedingly steady and temperate man. His general surroundings at home and at work are comfortable. After this examination I recommended patient to go to the Edinburgh Infirmary, where he was admitted, under the care of Dr Grainger Stewart, on the 1st of July.

State on Admission.—Patient is not a very strong-looking man, of average height. He is somewhat spare and anæmic, and has an anxious expression.

Alimentary System.—Suffers from dyspepsia of an atonic character. Bowels inclined to be loose. Liver dulness normal.

Hæmopoietic System.—No unnatural enlargement of any glands. No filariæ can be detected in the blood.

Circulatory and Respiratory Systems.—Normal.

Integumentary System.—The disease is seen to extend over the whole surface of the abdomen, upper part of scrotum, perineum, and inner part of thighs at side of scrotum. It is furthest advanced about the perineum and pubis. The surface of the abdomen presents the following appearance:—

In the lower part the disease takes the form of large, broad, flattened, transverse ridges or folds, separated from one another by sulci more or less deep, corresponding to the natural folds of skin upon the abdomen. These folds are composed of flattened nodular elevations, which coalesce in some places, are hard and resistant, and at parts feel almost cartilaginous to the touch. They do not "pit" on pressure. They are, for the most part, slightly darker in colour than the natural skin, and are entirely devoid of hair. Their surface is smooth; the cuticle is apparently normal. A group of these tubercular nodules is clustered round the umbilicus. On the upper part of the abdomen the skin is leathery, indurated, and hypertrophied, and has lost its natural elasticity. A few of the tuberculated nodules appear as a cluster to the left of the middle line, midway between the ensiform cartilage and the umbilicus. From the pubis the disease extends downwards to the fold of the groin on the inner aspect of the thighs, at the side of the scrotum, and then passes backwards along the perineum to the anus. The raphe of the perineum is completely obliterated. The mucous membrane of the rectum is not affected. Close by the anus, on the right side, there exists a large nodular pendulous mass, about the size of a man's fist, and a

similar growth is seen on the left side of the anus, about the size of an orange. The surface of the larger of these two masses is in process of ulceration, and is discharging a very offensive semi-purulent fluid. The skin of the penis and of the lower part of the scrotum is not affected; that of the upper part of the scrotum is hypertrophied, and presents an appearance very similar to the shell of a walnut, with exaggeration of the markings.

With the exception of the growths around the anus and that on the inside of the left thigh (which spring rather abruptly from the surrounding skin), the disease is not separated from the natural skin by any distinct line of demarcation—the thickening of the cutis vera beginning gradually, and getting more marked until the tuberculated masses are developed.

On all other parts of the patient's body the skin is quite natural; and with the exception of the cicatrix caused by the removal of the "wart" on the back of the neck already referred to, no markings are to be seen.

Urinary System.—Normal.

Nervous System.—Normal. There is no appreciable loss of sensibility over the seat of disease.

Locomotor System.—The two growths beside the anus, and the diseased condition of the perinaeum, give rise to very great discomfort when patient attempts to walk.

3d July.—Three small tubercles were removed to-day from the region of the umbilicus by the galvano-cautery. Under the microscope these appeared to be composed entirely of connective tissue fibres and cells in different degrees of development.

4th July.—Patient complains of want of sleep at night, caused by itching of the larger mass at the side of the anus. This appears to have increased in size since his admission. Boracic ointment was applied, but this seemed to increase the irritation.

6th July.—Patient being very desirous to have the two masses about the anus removed, Dr P. H. Watson proceeded to do so to-day by means of the galvano-cautery—the bowels having been previously cleared by an enema, and chloroform having been administered. The whole operation occupied about an hour, and was performed without the least hæmorrhage. A piece of dry boracic lint was applied to the cicatrices. The masses removed weighed together rather over seventeen ounces. Temp. vesp. 98° 5. A morphia suppository inserted at bed-time.

7th July.—Passed a good night. No pain in cicatrices. Temp. 101° 1. To have the following powder dusted on parts once in twenty-four hours:—R Acid boracic (pulv.) ʒij., Kaolin, ʒvj.

10th July.—Temperature has never been above 101° 3. Considerable factor now from cicatrices. To be bathed several times daily with Condy's fluid.

11th July.—Suffering to-day from rather severe diarrhoea. Ordered vegetable astringents.

14th July.—Diarrhoea gone. Sloughs which have formed



Mr Playfair's Case of Elephantiasis.

over cicatrices seem about to come away. Temp. normal. To have a draught containing potass. iodid. gr. xx. thrice daily.

16th July.—Sloughs came away yesterday. Surface below looks clean and healthy. Potass. iodid. stopped on account of depression and impairment of appetite it seemed to be causing.

29th July.—For a few days past patient has been much troubled with severe diarrhœa, which has somewhat irritated the granulating surfaces. These are discharging a good deal of pus, and have to some extent taken on the diseased action, the cicatrix on the left side especially being roughly tubercular. On other parts the disease seems to have undergone no alteration.

1st August.—At patient's own desire he was discharged to-day from the hospital relieved.

After leaving the Infirmary he went to his home in Linlithgowshire, where he was in service. For a short time he continued to gain a little strength, and was able to go about a little out of doors; but the diarrhœa setting in with greater severity soon reduced him to a state of great weakness. The cicatrices on the buttocks never completely healed. The disease about the anus also began to spread to the mucous membrane of the rectum, and by the middle of October, on introducing the finger into the bowel, tubercular masses could be felt on all sides. Patient, being now quite unfit for any kind of work, was obliged to give up his situation, and went to live in the North. The diarrhœa still continuing in spite of all treatment gradually produced extreme exhaustion, from which patient died in March of the following year (1877). No post-mortem examination was made. Not having seen patient since the autumn of 1876, I am unfortunately unable to state the appearance the disease presented at the date of death.

Remarks.—Apart from the interest attached to this case on account of its almost unique character, the following points seem worthy of special notice, in that they differ considerably from the ordinary run of symptoms in cases of elephantiasis:—

1st. Neither at the onset nor at any time during the course of the disease were there any symptoms of inflammation or fever. (The only elevation of temperature above the normal occurred for a few days after the operation, but this soon subsided.) The affection began without any attack of erythema, and ran its course steadily without any exacerbations.

2d. No enlargement of any lymphatic glands could be detected.

3d. The skin of the penis and of the lower part of the scrotum remained totally unaffected.

4th. It is probable that the mucous membrane of the intestine began to be affected with the disease at a period almost simultaneous with its first appearance on the surface of the abdomen. This was probably the cause of the persistent diarrhœa.

The accompanying lithograph, taken from a photograph of the 4th July 1876, may serve to give some idea of the appearance presented by the disease in front.

ARTICLE IV.—*On the Riviera, Madeira, the Canary Islands, and Davos, with reference to their Climate for Consumptive Invalids.*
By WILLIAM MARCET, M.D., F.R.S.

IT is singular indeed that stations so different in their climate and geographical bearings should be considered as holding out to consumptive patients hopes of improvement or recovery.

There are at present two very different views as to the influence of climate on the progress of phthisis. One of them considers a warm equal winter temperature, with a comparatively dry air, an abundance of sunlight, and an altitude approaching the sea level, as the most suitable in that respect; the other view holds that a cold winter temperature, with a dry air, bright sun, and low barometrical pressure, or, in other words, a certain altitude above the sea, are the most likely conditions to arrest or cure the disease. An appeal to experience gives, I should say, a reply favourable to the two descriptions of health-resorts if judiciously selected, although, frequently, it need not be added, neither will climate nor any remedial measure be of any avail.

It is not my intention to discuss the relative merits of either of these views; but I propose to inquire on what grounds either of the stations referred to at the heading of this communication should be preferred, and to endeavour to account for the beneficial influence they may exert on the progress of phthisis. A practice of nine winters on the Riviera,—three at Nice, and six at Cannes,—and a visit to Madeira and the Canary Islands, have acquainted me with the characters of these health-resorts; while a lengthened experimental inquiry on *the phenomena of respiration* at various altitudes extending to a height of 13,685 feet in the Alps, and to a somewhat lower altitude on the Peak of Teneriffe, yielded results calculated, I believe, to account in a great measure for the influence of such a place as Davos on a certain class of consumptive invalids.

The Riviera.—The Riviera in winter is undoubtedly very beneficial to cases of bronchitis; and phthisical invalids with more or less extensive bronchial irritation are very likely to improve as far as the bronchial affection is concerned. It is especially in the earliest stage of phthisis, marked by dry or moist crepitation at the apices, with no dulness on percussion, or only a shade of dulness, that I have seen the disease arrested and cured by wintering at Cannes. There is an uncertainty as to whether, in such instances, any tubercular deposit has actually taken place in the pulmonary tissue; but it is safe to conclude that the affected portions of the lungs, which are especially the apices, are in a state of congestion, with a tendency to mal-nutrition of the tissue, and that the congestion is productive of much local irritation affecting also the bronchial tubes. Where the tubercular formation is clearly

extending, the progress of the disease is likely to be impeded or checked more or less by the influence of the climate of the Riviera on the bronchial irritation, but it cannot be said that the course of the mischief is arrested.

In cases of pneumonic consolidation the same remark holds good as in strictly tubercular cases. The accompanying bronchial irritation will be probably much relieved, especially in the early part of the winter sojourn in the southern station: hence a temporary improvement will be obtained; but on the weather turning warm and damp, as it often does at the end of February, the patient may complain of having caught cold, the bronchial symptoms returning, when signs of softening of the deposit are not unlikely to show themselves. I could give many instances of those kinds of cases. I have seen, for instance, a young lady with extensive consolidation of one lung, and a cavern at that apex, go through a first winter at Cannes with little or no bronchitis and in the enjoyment of comparative good health; but the second winter, towards the spring, bronchitis setting in, followed by softening, brought the case to a rapid termination. When cavities have formed, if there is, in addition, any consolidation of tissue and much constitutional disturbance, I can hardly recommend the south of France; but where a pulmonary cavity with little or no consolidation and signs of bronchitis are met with, the general state of health remaining good, much benefit may result from wintering on the Riviera. Cases with bronchitis and signs of fibroid change in one lung, also, do well on the Mediterranean coast. Dr Sparks states, in his recent work on *The Riviera*, "Of the cases which may be sent with advantage to the Riviera, probably the most favourable are those of patients between twenty-five and thirty-five, or older, with a localized 'deposit' in one apex, a fair amount of flesh and strength, and little or no fever." I would add a remark in favour of cases with a pulmonary cavity and little or no consolidation, as I have seen a number of patients exhibiting obvious signs of such mischief do extremely well by wintering on the Riviera.

Hence, as to the advisability of sending a consumptive patient to winter on the Riviera, a careful examination of the case should be made previously, taking into account the physical signs of the chest, the condition of the bronchial mucous membrane, and general state of health.

As to the cause of the beneficial influence of the Riviera on pulmonary disease, it is due mainly, I believe, to a combination of circumstances favouring the evaporation of moisture from the lungs, and thereby facilitating the emission of carbonic acid from the blood and pulmonary tissue. These circumstances are specially — 1, a comparatively high mean temperature; 2, a comparatively dry state of the atmosphere.

Madeira and Teneriffe.— Let us now turn our attention to the islands of Madeira (latitude 32° 43') and Teneriffe (latitude 28° 20').

In order to form a correct idea of their respective climates, I must beg to enter shortly into their meteorological characters. The following mean monthly temperature of Madeira is extracted from Dr Grabham's book; that for Teneriffe is taken from Gabriel de Belcastel's work on the Canary Islands, and also from a record of observations made at Puerto de Orotava, on the N.E. side of Teneriffe (the same station as that of de Belcastel), and extending over a period of three years. The readings were recorded at 7 A.M., 2 P.M., and 9 P.M. by Mr Honegger, who very kindly handed me his figures. His thermometer was placed about six feet above ground, was well sheltered from the sun, and fully exposed to the north. He has no minima readings, and his means may be expected a trifle high; still, any difference in this respect is neutralized to a certain extent by the absence of maxima observations. It is remarkable how closely Mr de Belcastel and Mr Honegger's observations agree.

Mean Temperature.

AT MADEIRA— FUNCHAL, SOUTH SIDE.		ON THE ISLAND OF TENERIFFE, N.E. SIDE.	
		de Belcastel's.	Honegger's.
	° Fahr.	° Fahr.	° Fahr.
January,	61·9	62·2	61·2
February,	62·7	62·1	61·9
March,	64·0	64·2	63·7
April,	67·1	64·6	65·5
May,	68·4	69·4	69·1
June,	68·2	73·8	72·0
July,	70·1	76·1	74·5
August,	70·9	73·2	76·6
September,	70·9	71·8	73·0
October,	68·7	69·3	70·5
November,	65·0	68·4	68·0
December,	62·6	66·7	63·5
Means,	66·7	68·5	68·3

According to Honegger's statements, the approximate difference between the mean day and night temperature at Puerto de Orotava, on the island of Teneriffe, is in summer from 7° to 9° Fahr., and in winter from 11° to 14° Fahr.

It appears from de Belcastel's figures that, for a difference of latitude of 4° 23' between the latitude of Madeira and that of Teneriffe, there is a mean yearly excess of 1·8 for Teneriffe; but if the six winter and summer months be considered separately, we find an increase of only 0·8 for the winter, and one of 2·8 for the summer. It may therefore be concluded that the summers are rather warmer at Teneriffe than at Madeira, although the winters show but very little

difference with respect to temperature. The mean winter thermometer reading (November to April inclusively) for Teneriffe is $64^{\circ}7$, and for Madeira $63^{\circ}9$, which is not above what may be called a comfortable heat, although higher than that of the Riviera, which may be put down at 51° (Cannes). The mean Madeira temperature of the six summer months is $69^{\circ}5$, and that of Teneriffe $72^{\circ}3$; but cooler stations can be found in summer time on both islands. The north of Madeira affords a cool and pleasant climate in summer, clearly shown by the nature of the vegetation on that part of the island; unfortunately, the accommodation in those districts is limited. Cool places can also be found in summer on the island of Teneriffe, such as the Villa de Orotava, 1200 feet above the sea, or Laguna, about 1000 feet above the sea. The summer nights at Teneriffe are so pleasant and free from any chilly feeling due to radiation, that about and after nine o'clock in the evening crowds of people may be seen by gas-light bathing in the harbour of Santa Cruz.

As to the atmospheric humidity, that very important circumstance for consumptive invalids, with regard to Madeira, Dr Graham expresses himself as follows:—"The relative humidity of the winter months is frequently less than 72° (saturation 100), and seldom much greater except in short periods of westerly weather. The early summer months—June and July—are moister, the relative humidity often approaching to saturation point. Later in the season the moisture again diminishes, owing, it would seem, to concurrent veins of drier air from regions still farther north." With reference to Teneriffe, a number of observations I made near the seaside on the 26th, 27th, and 29th July yielded a daily mean difference between the readings of the dry and wet bulb thermometers of $8^{\circ}8$, $7^{\circ}9$, and $7^{\circ}8$ respectively, corresponding to $59^{\circ}9$ per cent., $63^{\circ}2$ per cent., and $63^{\circ}8$ per cent. of saturation, the mean for the three days being $63^{\circ}3$. Those figures give, I believe, a very fair idea of the degree of atmospheric moisture for the summer, as meteorological changes are few and far between on that island. I have records of the annual rainfall at Teneriffe for 1875 and 1876, from observations by Mr Honegger. In 1875 it amounted to 13.5 (English) inches; in 1876 to 15.9 inches. His observations for 1877 range only from January to April inclusively, amounting to a rainfall of 7.1 inches during that period. March, April, May, June, July, and August are the driest months, while the rainfall is distributed irregularly throughout the other months.

In Madeira, Dr Graham estimates the rainfall at 29 inches. It may be concluded, therefore, that the island of Teneriffe is much drier than that of Madeira. There are, however, comparatively wet months occasionally at Teneriffe, the rain that fell in December 1874, for instance, measuring 6.3 inches. Throughout the winter and most of the summer a layer of clouds somewhat over 2000 feet in thickness, wafted thither by the N.E. trade-wind, covers the island of Teneriffe at an altitude of about 3000 feet. Immediately

over the mist the sun shines in a dark-blue, cloudless sky; and higher still the heat of the sun is so great in summer that the astronomer Professor Piazzzi Smyth, who in 1856 spent a considerable time on the Peak, has reckoned the direct solar heat, at 9000 feet, to reach the extraordinary temperature of $212^{\circ}\cdot4$. Life and health can only stand such a heat because of the very great evaporation from the skin and lungs and the enormous radiation heated objects undergo. The atmosphere on Teneriffe above the clouds is so dry that, during a period of three weeks spent on that lofty peak, I have observed the readings of the dry and wet bulb thermometers to vary by a difference which has amounted to $30^{\circ}\cdot5$. Wooden boxes split, and electric flashes may be obtained and seen at night by rubbing with the hand the bed-sheets under tent, or, better, a vulcanized india-rubber cloth.¹ Of course it is not above the stratum of clouds that invalids should ever think of seeking a residence, as in summer, besides the objection from the heat in the daytime, the range of temperature at such altitudes between night and day amounts to some 50° Fahr. The trade-wind clouds, by checking solar and terrestrial radiation, temper the heat considerably below them. This and the dryness of the air under the clouds, although less than above them, makes the climate of that island peculiarly suited to consumptive invalids.

I was consulted, during my stay on the island of Teneriffe, by a young gentleman who was then living at the Villa de Orotava, and had resided on the island for some years. There was a dry cavity in one of his lungs, but his general state of health was very good; he rode out every day, and did not consider himself an invalid. He was anxious to return to England, but I strongly advised him to remain on the island a few years longer. The climate of Teneriffe appears to me to exert a favourable influence on the nutrition of the pulmonary tissue, and thereby assist in arresting the progress of pulmonary consolidation. I would therefore be inclined to recommend Teneriffe to consumptive patients with a commencement of pulmonary consolidation with or without a cavern, while the Riviera and Egypt are certainly best fitted for those in whose lungs the very first signs of tubercular disease are discovered, and who are suffering from much bronchial irritation. There is no difficulty in reaching Teneriffe by the Cape mail to Madeira, and from Madeira per African Steamship Company's steamers. Or a passage may be taken from Liverpool direct to Teneriffe on board one of the vessels of this Company; but the Cape mail affords greater comforts for invalids.

It is much to be regretted that the climate of the Canary Islands, which may be considered, I believe, well suited in certain cases of consumption, loses much of its usefulness, at all events at present, from the reluctance the inhabitants show to receive such patients on their island. I heard it stated at Teneriffe that phthisis was con-

¹ "Meteorological Observations on the Peak of Teneriffe," *Quart. Jour. Meteor. Soc.*, Oct. 1879.

sidered there as contagious, and that the people were averse on that account to anybody suffering from consumption landing on the islands. A letter in the *Times* for March the 18th of the present year, from the British consul at Grand Canary, fully justifies this report. It is to be hoped such mistaken ideas will not be lasting, and that the inhabitants of Teneriffe may soon awake to their own interest. At all events, there is an excellent boarding-house at Puerto de Orotava, on the north-east side of Teneriffe, kept by an Englishman, who, I am quite certain, will be most happy to extend his hospitality to any of his countrymen seeking the climate for the benefit of their health.

(*To be continued.*)

ARTICLE V.—*On the Alleged Synclitic Movement of the Fœtal Head.*

By D. BERRY HART, M.B., Assistant to the Professor of Midwifery in the University of Edinburgh, Secretary to the Edinburgh Obstetrical Society.

(*Read before the Obstetrical Society of Edinburgh, 28th April 1880.*)

IN the onward transit of the child's head through the pelvis, the relation of the planes of the fœtal head to certain artificially formed planes of the pelvis has claimed attention, and a certain progression of the head has been termed its "synclitic motion." I purpose to-night taking up this theory of the synclitic motion, and testing it by our knowledge of the maternal pelvis, fœtal head, and uterine powers.

In the first place it is necessary to define what is meant by synclitic motion, and what are the mechanical conditions permitting or preventing it. These will be best understood by the following simple examples:—

Let us suppose a cylinder, A B (Fig. 1), of uniform bore, and with sides whose friction is equal all round, to have a flat disk fitting it and sinking down uniformly by means of a fluid pressure on its upper surface. Now, if the disk, at the beginning of its descent, so lie in the tube that any diameter of its upper surface is always at right angles to the sides of the tube, it is evident it will remain so throughout all the descent. This can be put in another way. If in the diagram we draw a series of transverse lines at right angles to the long axis of the tube, thus dividing it into a number of uniform cross sections or parallel planes, then the disk, descending as already supposed, will have its lower surface always exactly superimposed on a tube-plane. The disk, accordingly, is descending synclitically because it is descending under the conditions necessary for synclitism, viz., a rigid disk or plane is the descending body, uniform pressure on the upper surface of the descending plane is the force, and there is uniform resistance to descent all round on the part of the cylinder.

If we again imagine a series of conditions as already described, with the only difference that the resistance to the descent of the

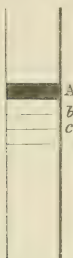


FIG. 1.



FIG. 2.



FIG. 3.

disk is greater on one side of the tube than the other, it is evident that after a certain amount of descent the disk will not coincide with the tube-planes, but will cut them, *i.e.*, the disk will not descend synclitically (Fig. 2). Now, further, if an edge of the disk lying against a side of the cylinder be so shaped as to slip down faster where resistance to descent is less; or if during descent the disk becomes distorted, then it is evident that we cannot have synclitic movement. When a movement of descent not synclitic has begun, it is evident that the fluid column will help to perpetuate synclitic motion, seeing we have a greater height of it above that part of the disk whose edge is lower.

So far we have only considered the downward descent of a disk in a straight cylinder. If the cylinder be curved, as at Fig. 3, then we get our tube-planes by dividing each side into an equal number of parts, beginning at the top, of course, and then joining these divisions. For the coincidence of the disk with the planes, *i.e.*, for synclitism, the edge of the disk at the concave side must sweep faster round than on the convex one. Now if the concave side of the cylinder, by being roughened, say, give more resistance to descent, and the edge of the disk at that side be so shaped as to slip slower down, synclitic motion is impossible.

We have now to apply these facts to the progress of the fetal head through the maternal canals.

In the first place, what planes of the pelvis are to be taken?

Hodge, who is the chief authority in regard to these planes, describes them as follows:—The first he places at the superior strait of the bony pelvis; the second is on a level with a line joining the subpubic ligament and the middle of the second bone of the sacrum, the third on a level with the spine of the ischia, and so on. All except the first meet anteriorly at the subpubic ligament (Fig. 4). Hodge¹ does not divide them, therefore, as I have done in diag. 3. (See Fig. 5.)

¹ *System of Obstetrics*, Philadelphia, 1864, p. 26.

The plane or disk of the fetal head is the parietal one, *i.e.*, that transverse plane of the fetal head which has the right parietal

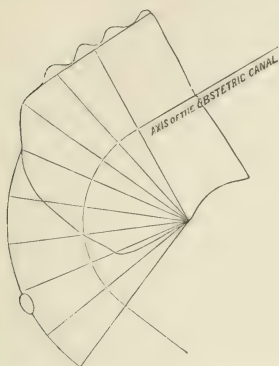


FIG. 4.—Bony pelvis in vertical mesial section, with parallel planes.

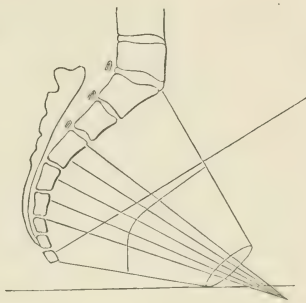


FIG. 5.—Vertical mesial section of developed parturient canal, showing parallel plane (Hodge).

eminence at one edge and the left at the other. The biparietal plane is chosen because it is that part of the head recognisable to the finger of the accoucheur. This defines its lateral points. Its anterior lies at the anterior extremity of the sagittal suture; its posterior at the base of the occiput, and is called by Hodge the cervico-bregmatic plane. More recently, however, the sub-occipito-bregmatic and occipito-frontal planes have been taken as the fetal planes. The sub-occipito-bregmatic¹ plane is the one taken when the head is markedly flexed; the occipito-frontal when this is less pronounced.

Hodge's description of synclitism is as follows:—

"For our illustration, as presenting the most simple view of the mechanism of labour, we still take, not an oblique position of the head, which has some complications, but a direct one, namely, the 'occipito-pubic position' of the 'vertex presentation,' the third of Baudelocque, but which, as we think, has been unnecessarily thrown out of view by M. Nægele.

"By the time the os uteri is nearly or quite dilated, in a primiparous patient, the bag of waters usually ruptures, and the whole force of the contractions of the uterus are immediately directed upon the body of the child, which is therefore compressed into a comparatively small space, the limbs towards the abdomen, while the imperfect flexion of the head becomes gradually increased. If the resistance of the os uteri be considerable this flexion becomes more complete,

¹ The sub-occipital point is midway between the occipital protuberance and foramen magnum. The bregma=anterior fontanel.

so that the occipital protuberance will be observed towards the pubis, the lambdoidal sutures converging on either side towards the sagittal suture. In a longer or shorter time the anterior margin of the os uteri slips over the protuberance of the occiput and retracts over the parietal protuberances to the face or neck of the child. The head is now left engaged in the superior strait, with the base of the occiput towards the top of the pubis, the parietal protuberance opposed to the sides of the brim, while the anterior fontanel will, with more or less precision, be opposite the promontory of the sacrum. Here there will probably be some delay, as the head is attempting to enter through the short or conjugate diameter of the brim; but in proportion to such delay will be necessary the increase of flexion, for the whole bearing-down force of the mother is, as Dr Duncan¹ well represents it, directed chiefly upon the short arm of the lever of the head through the medium of the spine of the child. The os occipitis, therefore, descends, while the os frontis is resisted by impinging against the promontory of the sacrum. Hence the cervico-bregmatic diameter of the head is parallel to the sacro-pubic diameter of the superior strait, while the bi-parietal or transverse diameter of the head is parallel to the bis-iliac or transverse of the brim, and the occipito-mental is coincident with the axis of the superior strait. Hence the plane of the occipito-bregmatic circumference is parallel to the plane of the superior strait. This is synclitism.

"I can hardly suppose that the statement thus given will meet with any objection, inasmuch as, if the head be not in a state of flexion, as I maintain, the protuberance of the occiput will be at the pubis, and the anterior portion of the os frontis, or forehead, will be at the promontory of the sacrum, in which case the head will be arrested, because the occipito-frontal diameter will be parallel with the short or conjugate diameter of the brim. Then the sagittal suture would run nearly in a direct line from the anterior to the posterior part of the pelvis, and the two fontanels would be at the same level. When, however, flexion has occurred, the posterior fontanel will be found lower down and nearer the centre of the strait, and the anterior higher up and nearer the promontory, while the sagittal suture will be found to run not only backwardly, but obliquely upward.

"The process of labour continuing, the child's head descends precisely in the same direction till the sinciput reaches the floor of the pelvis, and the occiput has glided along the posterior or inner surface of the body of the pubis; the whole head descending thus far through a cylinder, as M. Schroeder would express it, the occipito-mental diameter coincident with that of the axis of the brim, and the cervico-bregmatic plane parallel to each plane of such cylinder, till it reaches the level of the third sacral vertebra behind and the top of the arch of the pubis in front. By the time

¹ Hodge is alluding to Dr Matthews Duncan's paper, quoted farther on.

this is accomplished the os frontis has descended below the promontory of the sacrum, and the occiput appears under the arch of the pubis, when, as Dr Dewees would express it, the chin begins to leave the breast, or, more accurately, the process of extension commences. Now the further descent of the head is resisted by the sinciput striking against the floor of the pelvis, and anteriorly by the neck of the child pressing against the pubis. The driving force continues to operate, and chiefly upon the occiput, through the medium of the spine. This portion of the head then descends towards the perineum as far as practicable; but, the resistance here being also great, the head passes off diagonally between these opposing forces, and describes a circular motion on the base of the occiput under the arch of the pubis, where it is comparatively at rest. Hence the process of extension is continually increasing until the occiput has somewhat dilated the vulva, and the parietal protuberances will be perceived on either side at the tubers of the ischia, while through the rectum the anterior fontanel can be detected at the perineum or coccyx. The head, now partially extended, presents at the inferior strait, with the same diameter and the same planes which were recognised at the brim, and the occipito-mental diameter, which was coincident with the axis of the brim, is now in unison with that of the inferior strait, the chin pointing towards the concavity of the sacrum, while the vertex, as represented by the posterior fontanel, is at the centre, not of the vulva, but of the inferior strait. The plane, therefore, of the occipito-bregmatic circumference is parallel to the plane of the inferior strait. Now, as the head moved in this regular manner through the upper or cylindrical portion of the pelvis, presenting its equatorial plane, as Dr Barnes might term it, parallel to the planes of the cylinder, till the sinciput reached the floor of the pelvis, so, during the gradual process of extension through the curved portion of the canal, the same cervico-bregmatic plane became parallel to each successive oblique plane of the curved portion of the canal to the inferior strait. The parietal protuberances will always be found at the sides of the pelvis; and as the occiput gradually advances under the arch of the pubis, the posterior fontanel is found towards the centre of each plane till it reaches the outlet of the pelvis.

"The bearing-down efforts of the mother now force the child more and more against the perineum, the process of extension continues, till eventually the occiput gets in front of the pubis, the parietal protuberances on either side of the vulva, and the posterior fontanel is observed clearing the perineum at the centre of the dilated orifice of the vagina, so that again we have the cervico-bregmatic plane engaged, but now parallel to the plane of the orifice of the vagina. Hence the head passes through the canal of the vagina in this circular manner, presenting its equatorial plane parallel to the various oblique planes of the vagina.

"If this representation be correct, the fetal head 'at term,' notwithstanding its apparent irregularity of form, traverses the obstetric canal with as much readiness and precision, continually presenting the same diameters to the walls of the canal, and the same diameter of the head to the axis of the obstetric canal, as if it were a perfect sphere of about three and a half inches in diameter.

"This seems to me a correct representation of the synclitic movement of the child's head—in other words, the parallelism of the plane of the great occipital extremity—in relation to those of the pelvis and vagina.

"If we now consider the first position of the vertex, the left occipito-anterior, the process is rather more complicated, from two causes. The first is that the head is no longer direct, but oblique, at the superior strait, and subsequently in the cavity of the pelvis; and the second, resulting necessarily from the first peculiarity, is the necessity of a rotatory movement of the head, that the occiput may pass under the pubis.

"If the propositions already assumed be granted, these difficulties immediately vanish. For if the head passes through the os uteri in a state of flexion, presenting its cervico-bregmatic circumference to the circle of the os uteri and that of the superior strait, it may practically be regarded as a sphere or ball to be driven through the planes of the canal. Hence it would be a matter of no moment whether it did or did not rotate upon its axis, for diameters of the same length would always be coincident with those of the obstetric passages. Parallelism of planes, therefore, would ensue. To be, however, more precise: In this first position, as in the former, the resistance of the os uteri or the margin of the superior strait against the anterior parts of the head of the child, while the uterine forces are driving down the occiput through the medium of the spine, necessitates flexion of the head to a greater or less degree. Hence, after the os uteri has retreated, the head will be found oblique, not only because it extends diagonally from the left ramus of the pubis to the right sacro-iliac symphysis, but also because the occiput is lower in the pelvis than the forehead and the face. Hence the posterior fontanel will be found not on the same level with, but lower than, the anterior fontanel, and the sagittal suture, therefore, not running directly across the pelvis, but obliquely upward as well as backward.

"The parietal protuberances, of course, present obliquely to the right and left sides of the pelvis, while the base of the occiput will be towards the left anterior part of the pelvis, and the anterior fontanel towards the right sacro-iliac symphysis. Hence we have the cervico-bregmatic diameter parallel to one of the oblique, and the bi-parietal to the other oblique diameter of the brim, while the posterior extremity of the sagittal suture will be

found towards the centre of the pelvis, and the chin, being directly opposed to it, will be the most elevated part of the head."

Kueneke's account of synclitism I need not quote, as the description and the facts supporting the theory have already been brought before our Society and thoroughly refuted in an able paper by Dr Matthews Duncan.¹ To synclitism as defined and defended by Hodge and his followers, however, I have the following objections:—

In the first place, Hodge gives no sufficient reason for his arbitrary parallel planes—parallel because a fetal head plane is alleged to become parallel to them. What puts them completely out of consideration, however, is the fact that they are drawn on the bony pelvis. The mechanism of labour does not take place in a purely bony pelvis. It takes place in a curved bony canal lined by elastic tissue, chiefly lying posteriorly. This important fact is ignored in Hodge's description of synclitism, but a consideration of figure 6 will show how gross this omission is. As Duncan has shown, this will retard the descent of the side of the non-rotated head lying posteriorly, *i.e.*, will prevent synclitism, which of course demands that the side of the non-rotated head lying posteriorly must, during its whole transit, descend more rapidly than the anterior. Hodge further describes the synclitic movement in a special case that never occurs in nature, *viz.*, with the occipito-frontal diameter of the head always in a conjugate diameter. Such a mechanism, if it occurred, might allow of synclitism, for the following reason:—The greater resistance behind would retard the head in such a manner as to bring about flexion only. Inasmuch as the side walls of the pelvis have equal resistance, and the posterior pelvic resistance would tell equally on the whole forehead, *i.e.*, would not make the head rotate on an occipito-mental diameter, but only on a transverse axis, it is evident that synclitism might occur, although I can quite conceive the cervico-bregmatic plane cutting the parallel planes, even granting all that Hodge assumes. But the head never presents at the brim in the conjugate, unless possibly in the rare deformity known as Roberts's pelvis, and therefore Hodge's description and reasons based on it fall to the ground. But it may be urged, will this synclitism not occur after the head has rotated from the oblique into a pelvic conjugate diameter, *i.e.*, at the end of Hodge's sacro-pubic case. That it will not do so I shall attempt to show afterwards.

It is assumed further in the description of synclitism that the head is symmetrical during the whole of labour. Hodge even says: "it may be practically regarded as a sphere or ball." The answer to this, of course, is that it is not so. The head, in a labour moderately stiff, gets distorted, *i.e.*, has the side lying posteriorly flattened, and accordingly any arbitrary plane in it becomes also

¹ *Mechanism of Natural and Morbid Parturition*, Edin., 1875, p. 192.

distorted (Fig. 7). How this will prevent synclitism will be seen shortly. Then the uterine force, further, is alleged to act specially

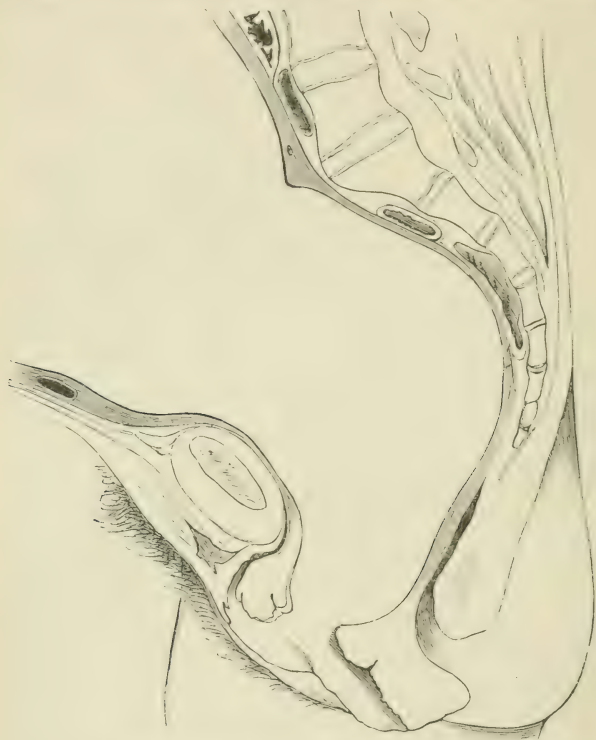


FIG. 6.—The developing parturient canal in nature, showing its elastic lining (after Braune).

through the fetal spine. Such an assertion is, I believe, utterly erroneous. But it is easy to see how it supports synclitism. The fact of the uterine force acting chiefly or principally through the spine gives a force driving on the head, which, acting at a point equally removed from either side of the head, will not rotate it on a longitudinal axis,—the movement which would destroy synclitism in the sacro pubic case of Hodge,—but on a transverse one, which may, of course, allow synclitism. The uterine force is, however, conducted through the whole fetus, and distributed over the plane of the girdle of contact, *i.e.*, over the plane surface

joining the line of contact between head and pelvis, where the pelvis is resisting the progress of the head. On this theory, then,

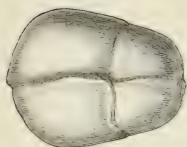


FIG. 7.—Fœtal head moulded by stiff labour, and planes distorted. (Seen from above.)

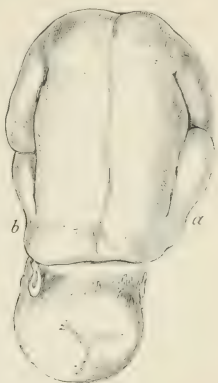


FIG. 8.—Child moulded at end of first stage of labour.
a and *b*, Grip of os internum; *a* Marks the side of child lying anteriorly (Braune).

synclitism will not be favoured, but, under certain conditions, be hindered.

Finally, under this head I deny that synclitism can be ascertained clinically. The finger of the accoucheur cannot recognise or trace out with anything like accuracy either a parallel plane in the pelvis of the parturient woman, or a special plane in the fetal head. How, then, can synclitism be clinically ascertained?

To sum up: Hodge describes synclitism in a non-existent head-mechanism; he ignores the elastic lining of the pelvic walls; he regards the fetal head as a rigid sphere, and the uterine force as conducted through the spine—all assumptions more or less erroneous. Our knowledge of the factors of labour enables us to say that all of them tend to prevent synclitism.

But a still more valuable fact against synclitism is got by studying the fetus given by Braune in his well-known section. The fetus there has the half of head lying anteriorly on a lower level than that lying posteriorly, *i.e.*, the head is not lying synclitically in Hodge's superior strait. The posterior resistance, even in the first stage, has begun to tell. Some may urge that this is the remains of Nægele's bi-parietal obliquity at the brim. The occurrence of that in normal labour, however, is exploded (Fig. 8).

In the left occipito-anterior position, then, the head progresses as follows:—It lies with its occipito-frontal diameter in the right oblique diameter (Solayres' obliquity), with the occiput lower than

the sinciput (Roederer's obliquity), and with no Naegele obliquity. The uterine and abdominal force, transmitted equally through the compact foetus, is distributed over the plane of the girdle of contact of the head, and forces it down. The occiput slips down faster than the sinciput, because of its special shape and the less pelvic resistance in front as compared with behind, for reasons explained by Dr Simpson¹ in his communication on head flexion. The plane of the girdle of contact is thus lower in front than behind, and, therefore, if the foetus be considered as a water column, there is a greater height above the occiput, which will further favour the normal antero-posterior flexion. Thus increase of flexion has accompanied descent. But the resistance of the posterior pelvic wall will retard the side of the head there: and thus the occipito-frontal plane of the foetal head will not coincide with Hodge's plane (the 2d), but will cut it; the foetal head plane will be lower anteriorly, will thus have the higher column of fluid, and consequently has all the conditions necessary to its slipping down faster, *i.e.*, to have a lateral flexion to the posterior shoulder, preventing synclitism. The posterior pelvic resistance further flattens the posterior side of the head, giving it that shape which makes it descend less rapidly, and distorting the foetal head-planes. From certain causes which need not be here enumerated, the head then rotates, and lies with its occipito-frontal diameter in a pelvic conjugate. Here the causes as to the shape of the head will retard synclitism, since one side of the head is steeper and slips down faster: and as the head does not rotate perfectly, the pelvic causes in the posterior wall already mentioned will also act in hindering it. I do not, therefore, believe that there is any evidence that at any part of its course the sub-occipito-bregmatic plane or occipito-frontal plane of the foetal head coincides with the so-called parallel pelvic planes.

ARTICLE VI.—*Cases of Carcinoma of the Female Pelvic Organs in Professor Simpson's Wards during the current Session.* By ALEXANDER HUGH BARBOUR, M.A., M.B.

(Communicated to the Edinburgh Obstetrical Society, 24th March 1880.)

Of the forty-five patients under treatment during the last four months in the gynecological department of the University Clinical Wards, under Professor Simpson, six were cases of carcinoma. Of these six, four had carcinoma of the cervix uteri, one of the vagina, one of the neck of the bladder and urethra. Several points of interest presented by these cases generally, and the rare occurrence of two of them, justify, I think, the bringing of them before the notice of this Society.

¹ Head Flexion in Labour: *Contributions to Obstetrics and Gynaecology*, p. 116.

CASES OF CARCINOMA CERVICIS UTERI.

As regards the cases of carcinoma cervicis, the ages of the patients were below what is generally associated in the mind with this disease. They were 30, 32, 35, and 40. In none did the family history show any hereditary predisposition. Three of them were married; all three were multiparæ: one was a nullipara, and a prostitute. In all, the usual symptoms of pain and the offensive discharge were present.

In one case these symptoms had come on during the puerperium, which illustrates the relation of carcinoma of the cervix to labour and the fissures of the cervix produced by the passage of the foetal head. Emmet lays special stress on the relation of carcinoma of the cervix to fissuring, and says that he has never failed to detect a laceration with the finger unless the disease had already involved the vaginal surface. The fact that one of the four was a nullipara shows that it may occur where the os has not been fissured; but the cases are too few to make any deductions from.

The second case was of interest in relation to the diagnosis between retained placenta and carcinoma developing during the puerperium. She had been delivered of a full-time child three weeks before admission, and was complaining of the lochial discharge having continued and being of an offensive character, and of the persistence of pain in the back and passing down the left thigh, which had come on during the latter months of pregnancy. The symptoms suggested retained placenta, and the physical examination on admission seemed to confirm this. The cervix was expanded, and fissured anteriorly and to the left. Its cavity was filled up with a breaking down mass, soft, friable, and bleeding, and attached posteriorly and to the left. There was considerable pain on examination. On the following day she passed several blood-clots, but no portions of placenta, and the offensive sanious discharge continued. On examining a few days after admission, the posterior and left lateral margins of the os ext. were felt to be indurated and eaten away, and the speculum showed an irregular bleeding surface. The breaking down mass attached to this was gone, and was seen to have been blood-clot.

The third case was a nullipara, æt. 32, with a history of a continuous hæmorrhagic discharge for ten months, and a gnawing pain in the epigastrium for eight months, worse at night. Six months before, when she was examined, the cervix was found to be enlarged and infiltrated with hard nodules, but not excavated. Now it was felt to be deeply excavated and fissured, and opened up so as readily to admit the tip of the forefinger; the fundus uteri was to the front, and movable, and apparently unaffected by the disease. As she remained in the ward till her death, three months after admission, we had an opportunity of watching the

progress of the case. The pain increased, being constant night and day, and of a tearing or gnawing character; there never were any marked hemorrhages, which is noteworthy, considering the extent to which the cervix has been eaten away, as shown by the preparation. She did not become emaciated, and the large quantity of fat present was noted at the post-mortem. Death seemed to result from the poisoning of the system from absorption of septic matter. Though the post-mortem examination showed that there had been perforation of the peritoneum, it was not indicated by any marked symptoms before death. At the post-mortem the whole pelvis was excised from the cadaver. This is the only satisfactory method for studying the position and relation of morbid growths in the pelvis. We can thus study the relation of the parts undisturbed, and this is further aided by making a vertical section, as has been done here (see Fig. 1). It was at Dr Hart's suggestion that the entire pelvis was removed in the two preparations before you. It can be done with little difficulty; and there is little mutilation of the cadaver, as it is almost a subcutaneous operation. An elliptical incision is made round the genitals, so that the external organs may be removed with the pelvis. A vertical incision is made in the middle line into the abdominal cavity, immediately above the symphysis pubis, and large enough to allow of the pelvis being dragged through. The knife is carried in through this opening, and the muscles are detached from the pubis and iliac crest, from their abdominal surface, care being taken that the knife does not pass through so as to divide the skin. The external surfaces of the ilia and pubis are cleared of the muscles in the same way; the femora disarticulated on both sides, and the muscles cleared from the ischia and sacrum behind. The pelvis, being freed, can be projected through the opening in the skin. This is best effected by bringing the body so that the pelvis projects beyond the edge of the table, while the legs hang over the side. The coils of intestine having been drawn up into the abdomen, the rectum is tied and divided. The knife is now used again to divide the inter-vertebral cartilage, either at the sacro-lumbar joint, or higher up if it is wished to remove some of the lumbar vertebrae also. The pelvis can then be twisted out, and padding introduced to preserve the form of the soft parts. The only laceration of the skin is the comparatively short abdominal incision and that round the genitals. After removal the pelvis should be thoroughly washed, the rectum and large blood-vessels being syringed out. It can be kept in weak spirit; but if a section is to be made, it should lie for a few hours in strong spirit. The sections which are now before you were prepared in this way and show the following points of interest. There is a considerable quantity of fat in the pelvis, the retropubic fat deposit of the pelvic floor, as described by Dr Hart, being well marked. The cervix uteri has been destroyed, the fundus ending below in an eroded

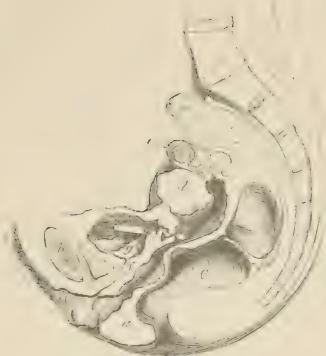


FIG. 1.—Vertical mesial section of Pelvis, from case of carcinoma uteri.

a, Perineum; *b*, Symphysis pubis; *c*, Rectum; *d*, Body of uterus; *e*, Small fibroid; *f*, Bladder. A small tube passes between bladder and excavated cervix through a fistula.



FIG. 2.—Vertical mesial section of Pelvis, from case of carcinoma vaginae et uteri.

f points to vagina eroded by disease; *e* is a malignant growth attached to uterus. Other letters as in FIG. 1.

surface. The adjacent mucous membrane of the vagina has also been destroyed, and a large irregular cavity thus produced, occupying the position of the cervix and upper end of the vagina, into which projects the conical eroded lower end of the fundus. The carcinomatous excavation seems to follow the line of the cellular tissue, extending upwards between the uterus and rectum, forwards between uterus and bladder, and downwards between bladder and anterior wall of vagina. Here it has stripped off a portion of the vaginal mucous membrane, which hangs with a free margin. The perforation has occurred into the peritoneal cavity on the right side, along the line of attachment of the uterus to the pubic segment of the pelvic floor, for three-quarters of an inch. There is also perforation of the mucous membrane of the bladder, producing a vesico-vaginal fistula. The bladder itself is contracted, and contains carcinomatous matter escaped from the vagina; but there is no induration of the walls except round the point of perforation. The urethra measures $1\frac{3}{8}$ inches, which is the normal length according to Skene.

CASE OF CARCINOMA VAGINÆ.

This case I give more fully from the notes of the clerk in charge.

J. M., æt. 41, admitted 27th December 1879. She complains of severe pain in the lower part of the abdomen, and discharge from the vagina of eighteen months' duration. Present attack began eighteen months ago, when she began to suffer from a pain, sometimes needle-like, and sometimes of a tearing nature, in the small of the back, on the left side. The pain was at first worse at night, and occurred in paroxysms of about an hour's duration. She had also pain during micturition and at stool, and she had to make water more frequently than before, requiring to rise several times during the night. She also suffered from a discharge from the vagina, at first profuse, bloody, and of an offensive smell. At this time she also noticed a swelling in the left groin, which grew gradually larger, and a few months after a swelling also appeared in the right groin, and enlarged slowly. During this illness she has fallen off in flesh and strength, and for the last three months has been unable for work. Her previous health was good, and there is no history of malignant disease in the family.

Physical examination of the abdomen showed an irregular nodulated mass in either groin, that in the right being larger. These masses are hard and movable, and quite superficial, and appear to be enlarged and indurated glands. On examining the external genitals there was seen behind the left labium minus a sharply defined projecting mass. On exploring it with the finger it was found to extend round the whole orifice of the vagina, and also forwards to and round the clitoris. The mass had a cartilaginous feeling. The rectal examination showed the induration to be apparently limited to the lower part of the vagina, the mucous

membrane being quite soft immediately above this, though some irregularity of the anterior wall could be felt higher up. The cervix uteri could be felt per rectum soft, and apparently not involved. The diagnosis was carcinoma of the vagina. Patient went home from the hospital, where she was seen about a month afterwards, and was much in the same condition as when in hospital. She died a fortnight after this; but I could learn nothing of her symptoms just before she died which threw any light on the immediate cause of death. A post-mortem was made, and the pelvis removed (see Fig. 2). The enlarged inguinal glands are seen as described in the history of the case. In vertical section the cavity of the bladder is seen to be much enlarged, and its walls thinned. The urethra is shortened, measuring only two-thirds of an inch. The cervix uteri has been destroyed, and the mucous membrane of the vagina for a short distance below it. The vaginal mucous membrane is apparently healthy in its middle portion, with the exception of a small patch on the anterior wall. The inferior portion round the ostium vaginae is indurated. The anterior segment of the pelvic floor is much smaller than in the other section, and the urethra shortened. Both of these can be accounted for by the distention of the bladder. Above the fundus uteri, and attached to it, is seen a tumour about the size of a goose's egg, of a soft consistence. This has not yet been examined microscopically to ascertain whether it is carcinomatous or simply fibroid. This case is of special interest as showing the difficulty of forming a complete diagnosis during life, and the importance of having a post-mortem to confirm and correct it. There is carcinoma vaginae as diagnosed, but the condition of the cervix was not made out. The condition of the ostium vaginae prevented vaginal examination, and what was thought to be cervix uteri, felt through the wall of rectum, must only have been the softened and breaking down cavity at the upper end of the vagina.

CASE OF CARCINOMA VESICÆ.

The patient with carcinoma of the bladder was a married woman, æt. 42, who had enjoyed good health till her present symptoms appeared. She had never been pregnant. Her menstrual history showed nothing noteworthy except that menstruation had ceased six months before, probably an early menopause. Came complaining of pain in the pelvis and frequency of micturition. The latter symptom first attracted her attention, as she had to rise often during the night to empty the bladder. The pain was worst before micturition. These symptoms had begun nine months before she applied for relief. Occasionally blood was present in small quantities in the urine. On vaginal examination the cavity of the vagina was much diminished. A body was felt filling up the anterior and lateral fornices, rounded above and tailed below,

corresponding in position to the urethra, neck, and trigone of the bladder. The surface was smooth and regular; consistence unequal, some parts feeling hard, others softer. The cervix uteri was reached with difficulty. It was felt high up above the mass, and distinct from it, of normal consistence. Os small, and looking backwards. Bimanually the uterus was felt to the front, not enlarged, movable above, but fixed below. The sound passed into the bladder with little difficulty. No deposit was felt in it. The mass described above was recognised to lie between the sound and the finger passed into the vagina. The urethra was dilated with the little finger by Professor Simpson. On reaching the neck of the bladder some difficulty was met with, from the canal becoming contracted. On introducing the finger further a rough nodular irregular surface was felt over the whole of the lower part of the bladder. The dilatation of the urethra relieved the pain on micturition, but as it was not a case for special treatment, and patient was anxious to go home, she was discharged, and I have not heard anything further of her.

ARTICLE VII.—*Upon the Causes, Prevention, and Treatment of Afterpains.* By JOHN E. RANKING, M.D., M.A. Oxon.

IT is in some degree surprising that writers on midwifery bestow so little attention upon the question of the pains to which the parturient woman is more or less liable after her delivery. Indeed, with few exceptions, little space is devoted to their consideration, less to the examination of the causes upon which they depend. The confusion under the one head of many various conditions is plainly shown by contrasting the remarks of different authors upon the liability of the primipara to their attack. One declares that she enjoys a constant immunity, another that, given a previous history of dysmenorrhœa, she is well-nigh as liable to suffer as the pluripara. The fact is, that while the former recognises intrauterine coagula as the commonest and almost the only cause of afterpains, the latter takes a wider view of the conditions which may occasion suffering after delivery. There are, however, many points of interest connected with the study of afterpains which can only be thoroughly elucidated by appeal to a number of instances so vast and so varied that a single lifetime would barely suffice for their investigation. Such are—1. The reasons why pluriparae are more liable to suffer than primiparae; 2. What property is it which the uterus, when reconstructed after childbed, lacks, whereby this tendency is increased? 3. Why uterine contraction is painful at all? 4. The relation of dysmenorrhœa to afterpains.

With reference to the relation in which dysmenorrhœa and afterpains stand to each other, it is at present impossible to say more

than—1. That women who suffer from dysmenorrhœa are more prone than others to suffer from afterpains, in the proportion of rather more than half the total number of cases; 2. That dysmenorrhœa in no way predisposes to the formation of intrauterine coagula after labour; 3. That the afterpains connected with it are always of the spasmodic and neuralgic variety; 4. That the character of the dysmenorrhœal pain stamps itself upon, and, as it were, determines the nature of afterpains; 5. That when the pain of dysmenorrhœa takes the form of uterine colic, it is probably nothing more than an individual exacerbation of the condition, whatever that may be, upon which depends the painful perception of uterine contraction.

I propose to consider:—The nature and causes of afterpains. To put forward views bearing upon this subject. To discuss the means which may be adopted for the prevention and treatment of afterpains.

SECTION I. *Anatomy of Uterus.*—It is superfluous for our present purpose to enter in any detail into the question of the intimate arrangement of the muscular fibres which form the walls of the gravid uterus. It would, however, appear to throw some light upon certain of the phenomena upon which afterpains more or less depend, to survey in a superficial manner the various groups under which the uterine muscles range themselves, referring for more elaborate and detailed accounts to the works of Helié, Priestly, and others. The uterine muscle-fibres, then, may be regarded as forming two main groups,—1. Longitudinal; 2. Circular.—although there are numerous fibres which, belonging to neither of these, take either a more or less transverse course, or, passing in all directions through the uterine wall, “defy the skill of the ablest dissectors.”

The circular fibres (with which, as regards their effect, these latter may well be grouped) form two hollow cones, disposed concentrically around the orifices of the Fallopian tubes, meeting each other in the middle line of the corpus uteri, and are more distinctly marked towards and around the cervix. Observers differ upon the question whether these fibres actually encircle the cervix; yet it must be granted that those who, with Bedford, would ascribe a veritable sphincter action to them in this part have very much to favour their views.

The longitudinal fibres are disposed throughout in the long axis of the organ, becoming blended, both before and behind, with the circular fibres of the cervix, and passing completely over the fundus. Their action is obviously to shorten the cavity from end to end, so as to make the fundus approach the os uteri.

The action of the circular fibres, when acting independently of the longitudinal, is to diminish the space at the uterine cornua, and approximate the surfaces of the whole cavity both of the body and cervix.

The innervation of the uterus still offers scope for investigation, in so far as the exact distribution and province of the various fibres derived from the ganglionic and cerebro-spinal systems is concerned.

The following facts, however, with reference to this subject, are well ascertained :—

A. Cerebro-Spinal System.—The nerve-fibres derived from this source come in part directly from the spinal cord, in part from the anterior branches of the sacral nerves. The former leave the cord in the neighbourhood of the last dorsal and upper lumbar vertebrae, being connected probably with the lumbar enlargement, in which, according to Althaus, lie important motor centres for the pelvic organs. According to Frankenhauser, they pass along sympathetic paths, traversing the inferior mesenteric ganglion, and run in one of the nerves which lie over the aorta until they reach the uterus. The sacral fibres go, probably, only to the cervix, which is alone in communication with the spinal nerves. Cazeaux, Lee, Jobert, Rendu, Boulard, and others agree in stating that the whole body of the uterus receives nerves of organic life exclusively.

B. Ganglionic System.—These are derived from the ovarian (and thus the renal) and hypogastric plexuses. In addition to these sources of nervous influence, the uterus appears to possess nerve-centres which exercise an independent influence upon the contractility of its fibres, and residing within the walls of the organ itself—such as occur, for instance, in the parenchyma of the heart and in the intestinal walls. Evidence in favour of such an arrangement may be deduced not only from the analogy of the organs mentioned, but also from the fact of the periodic contractions of the gravid uterus (the diagnostic value of which is strongly urged by Playfair), and also from phenomena manifested at times in the uterus after delivery. Hitherto, also, point the observations of De Graaf (*De Mulier. Organ.*, p. 326) that in dissected rabbits the womb was seen agitated by a fluctuating and peristaltic motion, and by its own force, to drive out the fetus. Further support, also, is gained from facts brought forward by Bedford to prove that “the uterus possesses a contractility of its own in no way dependent upon nervous supply.”

1. That the fetus has been expelled some hours after the death of the mother.

2. That parturition has been accomplished by the unaided efforts of nature in cases in which the lower portion of the spinal cord has been completely destroyed.

3. That Brown-Séquard has hundreds of times seen the uterus or its cornua, full or empty, contracting to appearance spontaneously after the death of rabbits and other animals, when the spinal cord had entirely lost not only its reflex power, but also the power of acting upon muscles when directly excited by galvanism, warmth, or mechanical stimuli (*Experimental Researches applied to Phy-*

siology and Pathology). "These centres are excited by the blood of dyspnoea, like the centres in the medulla oblongata and in the intestines; so that suffocation, compression of the aorta, hæmorrhage, etc., bring about uterine contractions. Even the centre presiding over uterine contractions, which is seated in the brain, is excited by the blood of dyspnoea" (Oser and Schlesinger). Frankenhauser has shown that irritation of the hypogastric plexus gives rise to uterine contractions, which also result from excitation of the spinal cord as high as the cerebellum.

Basch and Hoffmann (*Vienna Med. Yearbook*, 1878) find that electric stimulation of the hypogastric plexus causes contraction of the circular fibres of the uterus. Stimulation of the sacral nerves causes contraction of the longitudinal fibres. It does not, however, appear that the possibility of reflex influence in the latter case was excluded, a possibility not diminished by the later statement that stimulation of the sciatic nerves acts in a reflex manner chiefly upon the hypogastric nerves. It has been surmised that the sacral nerves are merely inhibitory (Fleming, *Veterinary Obstetrics*, London, 1878).

SECTION II. *Process of Parturition.*—The act of parturition commences with the earliest signs of uterine contraction, and ends with the expulsion of the placenta and membranes. The completion of labour is the resultant of various opposing forces, viz., the expulsive force of the uterus, abdominal muscles, and diaphragm, and the resistance offered by the fibres surrounding the os uteri, by the genital passages and other structures which close the pelvic outlet. In exact proportion as one or other of these predominates is labour tedious or rapid. The division of this act into distinct stages is not only of practical importance for right management of the patient until its completion, but is of further advantage as affording some clue to the reasons which may be given for the varying conditions under which involution takes place in different individuals. As these different stages would appear to stand in somewhat constant relations, not only as regards the duration of each, but also in their effect upon the condition of the uterus after delivery, it will be necessary to inquire rather closely what are the ordinary obstacles to the completion of each stage and the means by which they are overcome, reserving until later the consideration of any bearing which they may have, individually or collectively, upon involution. The only class of cases which I shall discuss are those which come under Denman's definition of natural labour:—1. That the head presents; 2. That the labour be not longer than 24 hours; 3. That delivery is accomplished without artificial assistance.

A. *First Stage.*—The only obstacle to be overcome in this stage is the closed os uteri. That dilatation of the os uteri is due to contractions of the uterus itself is admitted on all hands; but there is not the same consensus as to the particular muscles which tend

to bring it about. Thus Basch and Hoffmann declare that upon stimulation of the hypogastric nerves the circular fibres of the uterus contract, the cervix descends into the pelvis, and the os opens. In accepting their dictum we are met *in limine* by the objection that the circular fibres are at least most distinctly marked about the os uteri, although they do not surround it so evidently as the sphincters of other organs. We must therefore conclude that the muscular fibres in the vicinity of the os uteri remain inactive whilst similar fibres of which they form an integral part are in full action, a supposition which unnecessarily complicates the question. It seems far simpler, and in accordance with the known action of the longitudinal fibres, to agree with those observers who consider that the process of dilatation is, at any rate at its commencement, due entirely to the contractions of the longitudinal fibres drawing asunder the anterior and posterior lips of the os. Although it is difficult to support a theory of such independent action of these fibres by an appeal to other organs endowed with longitudinal and circular muscles, that it is far from improbable is shown not only by the similar action of the circular fibres seen in "hour-glass contraction," but also by a condition observed and noted in two cases during the post-puerperal period.

The circular fibres undoubtedly contribute to the completion of the process when the os is already so far dilated as to allow the presenting part of the amnion sac to protrude through and distend mechanically the orifice. It is fair to assume that the whole body of the uterus is roused into action reflexly by the pressure exercised by the protrusion upon the cerebro-spinal nerve-fibrils distributed to the cervix and vagina, whilst the distending force of the "water-wedge" would sufficiently counteract any effort of the muscles immediately surrounding the os. This order of events receives confirmation from the character of the distress accompanying the process; for whilst the earliest pain is of a cutting, tearing description, it assumes a forcing and distensive character when as yet the os uteri is not completely dilated.

B. Second Stage.—In this stage the resistance due to the undilated condition of the vagina, vulva, and other structures about the pelvic outlet, is overcome by the whole force of the uterine muscle, aided by the voluntary efforts of the patient. The greater impediment to delivery in this stage is counterbalanced by the increased vigour of the uterine contractions, due partly to evacuation of the liquor amnii, partly to the reflex impulse from the violent stimulation of the sacral nerves, which ceases only with the complete expulsion of the fetus. That parturition may be in all respects natural, it is needful that both these stages should occupy neither too short nor too long a time, and that the expelling and resisting forces should be proportionate in each, so that delivery may be neither precipitate nor tedious. The contractions of the uterine muscle are subject to the same laws which govern muscular contractility generally, and it is

equally dependent with other muscles upon the varying conditions of tone, work, and repose. Thus it is a matter of every-day observation, that in proportion as the uterine contractions have been vigorous and frequent their power for subsequent exertion is diminished. A long, tedious, yet active first stage is certainly followed by a long, tedious, inactive second stage. A tedious first stage in which the pains have been infrequent is followed by a more rapid second stage. Again, those cases in which the early stage of labour is masked by diarrhoea are invariably attended by a more rapid second stage. The precipitate labour is invariably followed by a period of inertia.

Parturition is most safely and securely effected when during each stage the pains, without being unduly infrequent, observe such regular intervals as to allow of proper and sufficient rest to the uterine tissue. If during any such labour the relative duration of contraction and relaxation be accurately noted, it will be found that, when strong pains are recurring even as frequently as twice in five minutes, the intervals of rest occupy as much as two-thirds of the whole time; whereas when pains are "doubling," the interval of rest is frequently less than the period of exertion.

Accoucheurs agree that very frequently-recurring pains, however inefficient, rapidly exhaust the uterus; apparently, as in the case of the heart when acting quickly, rather by lessening its period of rest than by merely increasing its work. It would appear, when we consider the ordinary progress of labour in the primipara and pluripara, as if nature invokes these mutual conditions to aid her in perfectly adjusting the respective stages of the process. For example, the longer time occupied in completing the first stage in the primipara makes a greater demand upon the uterus, and expends more of its force than is spent during the same process in later labours. The uterus, therefore, enters upon the second stage with, as it were, the edge taken off its vigour. In this condition, instead of being roused into rapid and renewed contractions by the resistance of the genital passages, which might thereby be injured, it is in many cases prone to a short period of inaction before resuming its periodic contractions, and very generally the intervals of relaxation are well marked even to the time of delivery. These repeated delays not only allow opportunity for full dilatation of the soft parts, but also provide a considerable amount of rest for the uterus itself, so that at the end of labour there is remaining a greater degree of latent force in the uterine tissue.

In later labours (and this becomes more marked, as a rule, in proportion to the number, and, in some degree, the frequency of the pregnancies) the os uteri is often partly open for a short time before labour begins, and afterwards the dilatation goes on more easily and rapidly; that is, less force is expended in effecting its completion. Thus, in the second stage, not only is the uterus less wearied, but the soft parts being also more dilatable, labour can

proceed more rapidly; the pains follow each other in quick succession, frequently double, and delivery is completed. The second stage, also, in the pluripara is further accelerated by the greater use of her voluntary powers which experience gives to the parturient. It is not unreasonable to suppose that these differences, which may be observed in the course of parturition between the primipara and the pluripara, have at least some effect upon the increased tendency to certain forms of afterpains in the case of the latter.

SECTION III. *Involution*.—Involution, the process whereby the uterus is restored to its original size after delivery, is usually held to be complete as soon as all discharge has ceased and the proper size of the organ, as measured by the sound, has been regained. It is, however, certain that all changes in the uterine tissue are not then arrested. Heschl,¹ writing upon this process, says—“The proper substance of the uterus undergoes so complete a transformation to molecular fat, that not one single fibre of the uterus existing previous to childbirth remains behind. This transformation does not commence before the fourth or sixth day, and not after the eighth—pretty evenly at all points, the cervix for the most part continuing for a couple of days longer in the condition in which it was just after delivery; somewhat later the inner layer is found more advanced in its reconstruction than the outer. In the single muscular fibres this process of decay begins at many points at once. In the fourth week there usually appears, when the uterus has already resumed its normal volume, but is still yellow and friable, the first commencement of a new formation of uterine substance in the body of the organ; whilst in the outer layer nuclei cells, and finally cells drawn out into fibres (which assume completely the form of the subsequent muscular fibres) make their appearance and become evident as young uterine substance. The formation is rarely to be met with at an earlier period, and then only scattered here and there. Whilst the last portions of the muscular structure decay and are absorbed, the new substance is developed at many points, so that, in the majority of cases, the reconstruction of the uterus is complete at the end of the second month. Puerperal diseases do not in general check, in any appreciable degree, this chain of changes, even though the uterus be itself diseased; but, on the other hand, the reconstruction, although unchecked, nevertheless in divers puerperal processes, both in chronic diseases and uterine malformations (as bicornis, etc.), gives rise to very serious modifications of the malady. These very newly formed fibres, instead of becoming consolidated, undergo very soon a fat metamorphosis, and this condition gives rise to the marked friability and yellowness of the uterus existing in such cases as have been just mentioned, even for some months.” Speaking of the regeneration of the mucous membrane, he says further—“A constant property of this new formation of mucous membrane consists in the appearance

¹ Translated by Dr McDonnell, Dublin, 1853.

of granular yellow, rust-coloured, or dark pigment, at first very abundant, but by degrees diminishing in quantity. Its presence may be recognised by the naked eye up to the third month, on account of its tolerably deep rust-brown colour and the varied spotting of the mucous membrane: even later it is discernible by the microscope." Although, at this time, so far renovated as to be capable of resuming its generative function, it is hard to believe, especially in the face of a still continued series of changes so coarse as those just mentioned, that the organ has therefore attained the maximum of repair of which its fibres are capable, or that development may not go on so long as the generative function is suspended. We are too often reminded in practice of the facility with which the uterus resumes this function when involution is even less advanced; and it is needless to do more than draw attention to the almost constant complaint of frequent impregnations in the history of many cases of chronic uterine disease. Apart from all the deflections from structural and functional perfection which are induced by chronic metritis, congestion, subinvolution, and the like (to all of which the pluriparous is far more obnoxious than the primiparous uterus), it can hardly be that an organ stimulated to increased growth and activity whilst thus in a state of comparative immaturity can produce a structure which shall be more than perfect after its kind. There is an increase of tissue, but that tissue will assimilate, more or less, to the model upon which it has been built up. If the type be imperfect, the antitype must be so also. The uterus which, before impregnation, is already "in the state in which it exists in the most perfect condition of the species," will develop into a structure which possesses all the energies needed for performance of its function in the highest possible degree; it is the perfect antitype of a perfect type. Thus, in like manner, it is not unreasonable to suppose that a tissue which is itself lacking in some essential element cannot beget a growth wherein that very deficiency is supplied. In short, I incline to the belief that further observations will tend to show that insufficient rest between successive impregnations has much to do with the greater liability to certain forms of afterpain in pluriparæ.

Unless we adopt some such explanation as this, it is almost impossible to account for the differences which are seen during the involution of the primiparous and the multiparous uterus—differences all the more striking when observed in the same patient, first under the conditions of frequent, and secondly of infrequent impregnation.

As soon as delivery is completed involution begins, and is carried on chiefly, if not entirely, in three ways, the individual effect of each seeming to vary in different cases. These are—1. Contraction; 2. Degeneration and absorption; 3. Drainage. The latter two, of very great importance,—especially absorption, as it is by this that the effete tissue is completely removed,—are to some degree dependent upon contraction.

Unless a duly contracted state of the organ is preserved, an undue quantity of blood circulates through its tissues, and fatty metamorphosis is delayed. In like manner, although the removal of the epithelial layer suffers sero-sanguinolent fluid to escape from the deeper layers of the mucous membrane, firm contraction tends to increase the flow by squeezing the tissues. Contraction, therefore, is by far the most important, if rapid involution is to result. The manner of this contraction constitutes the most marked, if not the only difference to be observed between the primiparous and the multiparous uterus during involution. In the former, expulsion of the secundines is immediately followed by firm contraction, which continues for a period, variable, but usually longer than obtains in the organ of multiparæ. That relaxation follows this primary contraction in one as surely as in the other is undoubted, for usually the uterus in the primipara, if examined some four or five hours after delivery, will be found as high as the iliac crests, or even nearly to the umbilicus. The length of time occupied by this first contraction exercises a very decided influence on the subsequent condition. The longer this is, the more completely can thrombosis take place in the lacerated vessels at the placental site, the greater is the fall in vascular tension, and the less is the chance of dislodgment of the thrombi and hæmorrhage into the uterine cavity when the organ relaxes. If these thrombi remain undisturbed, the lochia within the cavity will consist only of mucus, debris, serum, and whatever fluid blood escapes from the lining membrane. This, readily escaping through the wide-open os, has no time to coagulate, and so distend the cavity and give rise to definite contractions for its expulsion. In some cases, however, the flow is so slight that the outflow becomes retarded, and small coagula may form, which, lying partly in the uterus and partly outside, excite expulsive efforts for their removal. If, however, relaxation occur earlier, without being so premature or so complete as to give rise to post-partum hæmorrhage, or if the vascular tension be too great for the existing degree of contraction, the thrombi become loosened or completely removed, and allow of bleeding into the cavity, and coagulation to a greater or less extent, according to the tonicity of the uterine walls and the irritability of their nerves. As soon as contraction is excited the bleeding ceases, and the coagulum is gradually expelled. The degree of pain with which this is accomplished commonly varies directly with the size of the clot; and if this has become so large as to exceed the calibre of the os uteri, a mimic labour may result.

(To be continued.)

ARTICLE VIII.—*Cases of Puerperal Fever treated by the Muriated Tincture of Iron.* By CHARLES BELL, M.D., Lecturer on Midwifery and the Diseases of Women and Children, Fellow of the Royal College of Physicians, Edinburgh, etc.

(Read before the Edinburgh Obstetrical Society, 24th March 1880.)

HAVING on a former occasion read a paper before this Society expressing my views in regard to puerperal fever, I shall not occupy your time in now repeating them, further than to say that my additional experience and observation have still more confirmed those views, and satisfied me that Semertus and Reverius were correct in supposing that it is a blood disease, consequent upon being exposed to an impure atmosphere and coming in contact with polluted matter. Like other zymotic diseases, when uncomplicated it may run its course to a fatal termination without leaving a morbid organic trace behind. This fact is fully borne out by Dr Rigby, who says that "in some of the hospital cases which came under his notice there was neither time nor power sufficient to produce either symptom or trace of inflammation, the powers of life having from the commencement sunk under the deadly influence of the disease." This is, however, not a common form of the disease, and it is liable to become complicated with other diseases of an inflammatory character in different organs, more especially the uterus; hence arises the great diversity of opinions in reference to the disease, and the various kinds of treatment which have been recommended. But in employing the means which are most likely to eradicate the poison from the system, not only may the disease be overcome, but its complications may be modified and cured.

I have found no remedy so effectual in purifying the system as the Edinburgh preparation of the tincture of the muriate of iron when given regularly in full doses frequently repeated. The great error in the employment of this medicine is the timidity shown in giving it in sufficient doses; in consequence its good effects have been questioned in the diseases of a zymotic character, such as erysipelas, diphtheria, and scarlet fever. It has a remarkable effect in moderating the pulse and diminishing the secretion of pus. At the same time, I think it right to warn the practitioner against trusting to the new preparation of iron called the tincture ferri perchloridi, which differs from the tincture ferri muriatis in its formation, its medicinal effects, and in its analysis: yet when this latter medicine is ordered the former is often given by the apothecary, and disappointment is the result in many cases.

The following cases were attended by Mr Hutchinson, an intelligent pupil of mine, to whom I am indebted for the report of them:—

Beatrice McCane, æt. 20, unmarried, was taken in labour on the 21st November, when the membranes were ruptured in consequence, apparently, of a fright; but she did not send for her medical

attendant until 11 A.M. on the 22d, when the os uteri was found dilated to the size of a half-crown. Her bowels had not been moved for four days, and she had suppression of urine, rendering it necessary to use the catheter, and her bowels were opened by an enema of soap-and-water and castor-oil. Pains feeble and inefficient.

Nov. 23.—Pains stronger, but the first stage of labour not completed.

Nov. 24.—Pains weak and irregular. The os fully dilated at 6 A.M. The head having entered the brim, 40 drops of the liquor ergotæ were given. When the pains became stronger, the ergot was repeated in the course of an hour; but although the pains were stronger the head made little progress, and at 8.30 A.M. the patient gave indication of exhaustion, rendering it necessary to apply the forceps, which was done successfully at 9 A.M., and a living child was delivered. The placenta was soon expelled, but the perineum was seriously ruptured.

Nov. 25.—Had rigors during the night. Pulse 120, temperature 102° , lochia scanty and fetid. At the evening visit the pulse was 130, temperature $103^{\circ}5$. To have 20 grains of the salicylate of soda every three hours, and to have the vagina washed out with tepid milk-and-water.

Nov. 26.—Severe pain in the left iliac region, along with general tympanitis of the abdomen. Pulse 125, temperature $102^{\circ}5$. Dr Charles Bell was requested to see the patient in the afternoon, when he ordered her to have the vagina washed out with a solution of Condyl's fluid, linseed poultices to be frequently applied to the abdomen, and 30 drops of the tinct. ferri muriatis (Edinburgh) to be given every two hours. Immediately before the tincture of iron was given the pulse was 135, and the temperature $103^{\circ}5$.

Nov. 27, 11 A.M.—Pulse 100, temperature $100^{\circ}6$. Bowels moved with castor-oil, which brought away a quantity of dark-coloured matter and flatus. The lochia improved, and free from fætor. The iron and poultices to be continued, along with arrowroot, beef-tea, and milk. In the afternoon, although the general appearance much improved, the pulse rose to 120 and the temperature to 102° .

Nov. 28.—Passed a good night; no pain; the lochia free from fætor. Pulse 100, temperature 100° . To have 20 grains of Gregory's mixture.

Nov. 29.—Bowels not acted. To have castor-oil.

Nov. 30.—Feverish symptoms have returned; pains over the body; the face is flushed, and she has an anxious expression. Pulse 120, temperature 103° ; has had a rigor. On inquiry the iron had been neglected since yesterday. It was ordered to be renewed, along with the poultices. To have Dover's powder at bedtime.

Dec. 1.—Has had several hours' sleep, and has perspired freely. Has less pain. Pulse 120, temperature 103° , and her general appearance improved. The iron and injections to be continued.

Dec. 2.—All her symptoms improved. Pulse 96, temperature 98° 7. From this period she continued to improve, and went to the country in health.

Mrs M. was safely delivered after a natural labour on the 18th December 1879. She went on satisfactorily until the 26th, when she was seized with pain in the left iliac region, having had a rigor during the previous evening, followed by profuse perspiration. Pulse 130, temperature 105°, respiration 28–30 per minute. Bowels not moved for the three days; urine almost entirely suppressed, coming away only in drops, and scalding. The lochia was entirely suppressed.

Treatment.—To have castor-oil: poultices to be applied every three hours. The vagina to be washed out with a solution of Condy's fluid. To have 15 drops of the tincture ferri muriatis (Edinburgh) every two hours.

Dec. 27.—Feels greatly better, but has a sense of weakness. Pulse 75, temperature 95° 6. The lochia have returned, and she has voided urine freely of high colour. Bowels open, skin moist. To have 15 grains of the bicarbonate of soda in a tumbler of water twice a day, with the view of preventing scalding.

Dec. 28.—Feels better, and is stronger. Pulse and temperature natural.

Jan. 1.—Able to sit up, and is inclined for food. She made a good recovery.



ARTICLE IX.—*On Rötheln, Rubcola, or German Measles.* By W.

DOUGLAS HEMMING, F.R.C.S. Ed., Bournemouth, late Assistant Surgeon Central London Throat and Ear Hospital, etc.

THE disease known by the above names is one which, though not recognised as distinct in the nomenclature of diseases issued by the College of Physicians, is well known to many practitioners as having characters of its own sufficient to justify its being considered as a distinct disease. Although, however, it has been described by several authorities, it appears that it is as yet scarcely so generally recognised by the profession as it should be. I have therefore endeavoured in this paper to describe clearly the distinctive character of the affection, gathered from reference to what has been written upon it by various authorities, and from cases which have come under my own observation. It will be observed that I have placed three different names at the head of this paper. The first, *rötheln*, is the German appellation for the disease I am about to describe; the second, *rubcola*, is a name which has also been given to it in Germany, but which, if used in this country, is apt to cause some confusion, as it is also applied to measles. It would probably be better if the term *morbilli* were kept for measles, and *rubcola* applied to the disease in question. The name,

however, is not of so much importance, provided some understanding be come to as to what it shall really be, and I am quite content to employ only the term rōtheln. Other terms, such as German measles, bastard measles, scarlatina morbillosa, etc., are objectionable, as they seem to perpetuate the idea that the disease is a hybrid one, and not distinct. We can therefore at present scarcely do better than adopt the name rōtheln.

Rōtheln may be defined, according to Copland, as "a fever attended by coryza, redness and watering of the eyes, redness and soreness of the throat, pains in the head, back, and limbs, attended on the third or fourth day by sudden and general eruption of a red efflorescence, which terminates about the tenth day by desquamation, the disease presenting the characters of measles and scarlatina conjoined."

This definition very fairly describes the chief points in the disease, and the great peculiarity of it is that, while presenting the features of measles and scarlatina conjoined, it yet has sufficiently distinct characters of its own to prevent its being confounded with either, provided the observer be sufficiently careful. It will perhaps be better to go through the various symptoms, and then to contrast these symptoms with those of the other two diseases, and show clearly the points of difference which are of diagnostic value.

First, however, it may be interesting briefly to trace the history of rōtheln. It appears to have been first described in Germany by Ziegler, Heim,¹ and Hildenbrand,² by the last named of whom it was called rubeola. The first account which I can find of it in Great Britain was by Dr R. Paterson of Leith, who, in a paper in the *Edinburgh Medical and Surgical Journal* (April 1841, p. 381), gives a very clear and full account of it. In 1856 another account appeared from the pen of Dr G. W. Balfour.³ Since that time the disease has been mentioned by some authorities and ignored by others. Watson scarcely alludes to it; Tanner just mentions it; Reynolds considers that it is generally an error in diagnosis; by Niemeyer it is regarded as a modification of scarlatina or measles; and Hebra refuses to recognise its distinctive character. Dr Murchison called attention to the diagnostic points by which rōtheln may be differentiated from the two allied diseases in a clinical lecture delivered at the Middlesex Hospital,⁴ and Dr R. Liveing made it also the subject of a lecture in 1874.⁵ The latest accounts are contained in Roberts's *Handbook of Medicine*; in J. Lewis Smith's *Diseases of Infancy and Childhood*, 1876; in a paper by Dr Etheridge of Chicago, in the *Chicago Medical Journal and Examiner* for April 1875; in Charteris's *Handbook of the Practice of Medicine*; and in Husband's *Handbook of Practice of Medicine*,

¹ Heim, in *Hufeland's Journal*, 1812.

² Hildenbrand, *Inst. Pract. Med.*, iv. p. 412.

³ *Edinburgh Medical Journal*, 1856-7, p. 717.

⁴ *Lancet*, 29th Oct. 1870. ⁵ *Lancet*, 14th March 1874.

2d edition, 1878,—all of which I have consulted in the preparation of this paper. Having thus briefly referred to the history of the disease, I proceed to give an account of its principal features, gathered from the above-mentioned authors, and from cases which have occurred in my own practice.

Premontory Symptoms.—These are frequently absent, and even if present are usually very slight. There is some languor and headache, with occasionally nausea and vomiting. Some catarrhal symptoms, sneezing, and watering of the eyes, are frequently present, and there may be a cough of the harsh, clanging kind usual in measles. One of the most constant symptoms in this stage is sore throat, which has been present in every case under my own observation, and is also particularly mentioned by Paterson, Dunlop, Murchison, Aitken, Liveing, Copland, and Balfour. This throat affection is usually slight, and does not proceed to ulceration, though cases have been noticed in which there was severe inflammation of the tonsils, velum, uvula, etc. The duration of this premonitory or invasion stage varies from some few hours to three, four, or five days, and is succeeded by the appearance of the characteristic eruption.

Eruptive Stage.—The eruption appears, as has just been stated, at a variable period, usually, however, about the second day. Murchison and Liveing place it at the second day; Copland, Aitken, Paterson, and Roberts say the third or fourth, while Fox puts it down as the fifth. The rash has been somewhat differently described by the various authors who have written upon it. Copland speaks of it as an efflorescence, which term I think very aptly describes it. It generally breaks out at once all over the body, and consists of small red stigmata, which run together to form patches of variable size with irregular margins. The patches do not assume so distinctly a crescentic or horse-shoe shape as do those of measles. The spots are slightly elevated above the surface, and grow paler in colour towards their circumference. Paterson compares the appearance of the patches in colour to that “produced by a writing-quill dipped in red ink, and having its point placed on moist white paper.” The patches in some instances may so coalesce as to cover almost the entire body, and thus to closely resemble the eruption of scarlatina. In all the cases which have come under my own observation, however, I have found, on careful examination, that on some parts of the body one or more patches remained distinct, although at first sight the surface seemed entirely covered with the eruption. When the body is so much covered as to lead to some doubt whether the case may not be one of scarlatina, Hildenbrand says that *rötheln* may be distinguished by the white spots left by pressure with the finger reddening. Dr Balfour, however, does not agree with this remark.

During the continuance of the eruption the other symptoms increase in severity, and new ones may be superadded. The sore

throat is aggravated; there may be so much hoarseness as to amount to loss of voice, and more or less external swelling of the throat may generally be noticed. This was particularly marked in one case which came under my care, in which during the first few days of the eruption there was considerable external swelling of the throat, which was extremely tender. In very severe cases there may also be much internal tumefaction and redness, with "total inability to swallow even the slightest portion of fluid, which generally regurgitates by the nose." The pulse during this stage is frequent, the skin hot and dry, and the patient is restless. The temperature rarely rises above 101° , though Smith records one case in which, on the second day of the eruption, it reached $103\frac{1}{4}^{\circ}$. It is during this stage that in the most severe cases death occurs, which event may be due either to suffocation from great mucous secretion in the throat, or from convulsions and subsequent coma. Vomiting is not a very uncommon accompaniment of this stage. The duration of the eruptive stage varies from eight hours (Steiner, of Prague) to eight or ten days (Liveing). The average period of duration would seem to be about four or five days. None of the English authors place it at less than two days, and Paterson, Liveing, Murchison, and Roberts allow that it may last as long as ten days. On the disappearance of the rash more or less desquamation usually takes place, constituting the third stage. This peeling differs from that of scarlatina in the fact that it takes place in very fine branny scales, and never in large patches. The desquamation commences towards the centre of each eruptive patch, and extends towards the circumference. The commencement of the third stage is not unfrequently marked by more or less crisis, sweat, deposit from the urine, diarrhoea, or epistaxis, but in the generality of cases the rash simply fades gradually away. The duration of the desquamative period varies from five to twelve or fifteen days.

Treatment.—In the vast majority of cases but little if any treatment is required. The disease is usually so mild in character that it may be allowed to run its course without any interference. The patient should be kept warm in bed, the bowels opened, and a simple saline mixture given; beyond this nothing will very often be required. In severe cases, however, more active measures must be resorted to. The throat symptoms will not uncommonly require looking after. Steaming with hot water will be found very efficacious, and a gargle of milk and water may be employed. Among the medicines recommended, Paterson mentions liq. ammoniac acetatis (which I myself have generally given, and with good effect), combined with vinum antimoniale; Lewis Smith advocates quinine in small doses; and Balfour advises carbonate of ammonia. Symptoms of adynamia must of course be met by appropriate remedies, and should complications occur they must be treated as they arise.

Having now given a sketch of the symptoms and treatment of r  theln itself, it will, I think, be interesting and useful to trace out the points in which these symptoms differ from those of the two diseases which it resembles, so as to afford sufficient means for diagnosis.

The principal points of difference between r  theln, scarlatina, and measles are:—1. In the temperature. 2. In the mode of appearance of the eruption. 3. The non-protectiveness of r  theln against either scarlatina or measles, and *vice versa*. 4. The disease propagates itself, and never leads to the production of either measles or scarlatina. 5. The eruption is characteristic in its elevation, and in the heightened colour of the centre of the patches. 6. In the manner of desquamation. 7. In the fact that the more severe is the case the greater is the size and brightness of the patches. 8. The character of the tongue. I will briefly discuss seriatim these various diagnostic points.

1. *Temperature*.—This, as I have stated, rarely rises above 101° or 102°. Wunderlich¹ says, “The temperature is nearly always sub-febrile, sometimes febrile.” In scarlatina, on the other hand, the temperature may reach 105°-6,² or even higher, and usually remains continuously high during the eruption; and in measles the temperature increases up to the height of the rash, and for *one* day, in the eruptive stage in uncomplicated cases, will rise to 106°, thence rapidly subsiding to the normal, which it reaches in forty-eight hours.

2. *Mode of Appearance of Eruption*.—The eruption in r  theln appears all at once over the whole body. This peculiarity is almost constant, and is frequently remarked by parents and others in charge of patients. In scarlatina the rash first appears on the body and limbs, or exceptionally on the face and neck; while in measles the parts first attacked by the eruption are the forehead and face, whence it gradually extends down over the body, legs, and arms.

3. *Non-Protectiveness of R  theln*.—The fact of an attack of r  theln affording no protection against the occurrence of either measles or scarlatina, and *vice versa*, has been remarked by all who have written upon it, and was well exemplified in several instances under my own observation. A remarkable case bearing upon this point is mentioned by Mr H. C. Brenchley,² where an attack of r  theln was succeeded by genuine scarlatina just as the patient was convalescing from the former disease.

4. *Self-Propagation of the Disease*.—The fact that r  theln propagates itself, and never gives rise either to measles or scarlatina, is particularly remarked by Murchison and Liveing.

5. *Characteristics of the Eruption*.—The patches of eruption in r  theln are raised above the surrounding skin, particularly towards

¹ Wunderlich, *Medical Thermometry*. Translated by Woodman.

² *Lancet*, 19th Nov. 1870.

the centre of the patch, where the colour is also deeper. In scarlatina no elevation of skin answering to centre of patches is noticed, and the colour is more uniform; while in measles the patches assume a crescentic form, and are slightly elevated above the surrounding skin.

6. *Manner of Desquamation*.—The desquamation in röteln occurs in minute portions of cuticle like scales of fine bran, and always begins towards the centre of an eruptive patch, gradually extending to the circumference. On the hands and feet the scales may be larger, but they never approach the size of those observed in desquamation after scarlatina, where the whole epidermis of the hand or foot may be detached entire, and slipped off like a glove.

7. *Severity of Eruption in Proportion to that of Case*.—In severe cases the patches of eruption are larger and brighter than in mild ones: whereas in scarlatina there is frequently less rash in severe than in mild cases, and the same holds good with regard to measles.

8. *Character of Tongue*.—The tongue is more or less dirty at first, then becomes strawberry-like, and finally smooth (Balfour). In scarlatina the tongue is furred and strawberry, but as it cleans the papillæ still remain prominent for some time; and in measles the tongue is much furred, usually moist, with some enlarged and red papillæ; it cleans in patches, and sometimes tends to be dry and brown.

A careful study of the above points of difference will, I think, be sufficient to show the distinct nature of röteln, and will enable any practitioner to recognise it with ease. If such be the case, my object in the preparation of this paper will be fully attained.

Part Second.

REVIEWS.

Leprosy. By W. MUNRO, M.D., C.M., Manchester, late Medical Officer, St Kitts, West Indies. John Heywood, Manchester, 1879.

In perusing this monograph it is difficult to say whether one is more impressed with the extent and variety of Dr Munro's reading or with the vigour and earnestness with which he pursues his subject, and his power of condensation. Rare as cases of leprosy now are in this country, the disease possesses a peculiar fascination, much of which may be traced to the impression made on our minds, during their most receptive period, by the perusal of the accounts of it in

the sacred writings. The leprosy of Miriam, of Naaman, and Gehazi, as well as the cases referred to in the New Testament, all tend to produce a startling effect, while the strictness of the Mosaic laws with reference to lepers point to a disease which isolation could alone eradicate.

The allegation made to the House of Commons by Dr Bakewell of Trinidad, that leprosy was conveyed by vaccination, and had increased since compulsory vaccination had been introduced into the West Indian Islands, led the author to investigate the subject; and in the work before us he endeavours to show—1st, That the idea that leprosy is increased by vaccination is groundless; 2d, That it is communicable; and 3d, That its probable primary cause is a want of salt, combined with a deficient vegetable diet. As might be expected, there is no difficulty in proving the first proposition; *per se*, vaccination exerts no influence on leprosy, and there is no evidence that it has been spread by vaccination. The question of the communicability of leprosy is one of much importance, and is very fully treated of in Dr Munro's work. He traces the history of leprosy from the earliest times, availing himself in this of the light which has been thrown on it by the deciphering of the cuneiform and hieroglyphic characters, and concludes that leprosy was probably indigenous in Northern Central Africa and in India, possibly in China. Communicated to other nations by intercourse, it spread in all directions, slowly though surely, again to disappear as habits of life improved, diet became better, and segregation was practised more thoroughly. The more carefully one looks into Dr Munro's epitome of the history and spread of leprosy, the more the conviction gains strength that in no other way save by contagion could the occurrence of the disease in new localities be accounted for. The influence of a fish diet in causing leprosy has been insisted on, and of late especially by Hutchinson; but Munro very successfully combats this theory, shows that leprosy, except in Norway, is more common in the interior of countries than on the coast, and states that the opinion as to the prevalence of leprosy being in any measure dependent on proximity to the sea or large rivers, *except in so far as these are great pathways of human intercourse*, is utterly erroneous. That leprosy is one of the strictly hereditary diseases has been assumed almost without question; yet Munro gives many proofs "that leprosy is not always, but only very rarely, transmitted from generation to generation, has never been proved to be transmitted without contact, is not constantly transmitted even when both parents are diseased, seldom affects more than one child in a family, and these only successively, independent of age, sometimes the youngest first, after contact, and goes back from child to parent when in contact." The evidence Munro adduces must materially lessen the faith in the hereditary nature of leprosy. Having now paved the way for entering directly on the question of contagion

itself, the author deals with this as incisively as with the other related points; and after reading what he has to say touching it, one cannot help feeling surprise that so lately as last year an author (Mr Squire, in *Reynolds's System of Medicine*) could make such a statement as this: "Greek elephantiasis was formerly thought to be contagious. It has, however, long been satisfactorily ascertained that it is not so." The best reply to such an assertion is to quote Dr Munro's conclusions:—

"To sum up the whole of the proofs of communicability I have given in this work:—

"I. It has always spread from race to race whenever an infected race was brought into contact, under favourable conditions, with a non-infected one.

"II. It has been and is most prevalent amongst those races and nations among whom the freest communication with lepers is allowed by public opinion and law.

"III. The so-called proofs of heredity commonly advanced being utterly defective, most if not all the cases accepted by some authors as hereditary are best accounted for by communicability.

"IV. The cases on record of probably communicated leprosy strongly support this view, and, taken with the other proofs, show that the disease is undoubtedly communicable, probably only by long-continued contact or inoculation, but possibly through drinking water."

Dr Munro believes that the diseased tissues of a leper are themselves poisonous; and since the publication of his book evidence has been brought forward that the poison is a bacterial one.

The author advances an ingenious theory for the origin of leprosy in those countries—viz., Northern Central Africa and India—where it has been endemic since the dawn of history. This is a want of salt, combined with a vegetable diet; and it is singular that these two conditions are found almost exclusively in the places mentioned above. We have said almost exclusively, because nearly similar ones have been found in the interior of New Zealand, and here Thomson found Ngerengere, a disease believed to be a form of leprosy. Curiously enough, we came across a sentence in Mungo Park's *Travels*, which seems to have escaped Dr Munro's keen eyes, and which tends to support his theory of the double causation. Park says, "The long use of vegetable food creates so painful a longing for salt that no words can sufficiently describe it." The application of this is best given in Dr Munro's own words: "The chief action of salt in the body is, as is well known, to dissolve albumenoids. If the system is deprived of it, would we not expect that the albumenoids kept in solution by it would become deposited? Now, this is exactly what takes place in leprosy, in which, in the tubercular form, there is a deposit of albumenoids under the skin; in the non-tubercular, between the tubules of the affected nerves. All other changes follow from this, which is the primary one."

Dr Munro concludes his treatise with a short description of the symptoms, diagnosis, and treatment of leprosy. He believes both chaulmoogra and gurjon oil to be valuable agents in the treatment of the disease. For the treatment of the population, segregation is all-important, and, combined with this, a more abundant supply of salt, necessitating the remission of the salt-tax in India, and the use of animal food prohibited by the Brahminical religion.

In concluding this notice we may be permitted to remark that seldom has such a valuable monograph appeared of late years. It is a remarkable example of industry, along with sound reasoning; and we augur badly if we may not certainly predict that, if life and health are spared, other works of no less permanent worth will emanate from the same accomplished source.

Photographic Illustrations of Skin Diseases. By G. H. Fox, A.M., M.D., Clinical Professor of Dermatology, Starling Medical College, Columbus, O., etc. Parts 5, 6, 7, 8. New York: E. B. Treat.

THE second third of this atlas is in most cases a decided improvement on the first, excellent though that was. In the parts before us Dr Fox has reproduced not only many well-known forms of skin disease, but also several which find no place in the more accessible atlases. Eczema takes up nine of the twenty figures contained in these four parts. Only one of these, that of papular eczema, scarcely comes up to the standard of the rest; and here the fault is due, not to any imperfection of execution, but to the scale adopted in this particular instance being too small. The infantile, pustular, scaly, and varicose varieties are unmistakable, and the same may be said of the autotype of eczema of the beard. The letterpress accompanying these plates is original in character, and the section on treatment points out the indications for soothing or stimulating measures more distinctly than can be found elsewhere. Lupus vulgaris and erythematosus are well depicted in a couple of plates. Dr Fox recognises the existence of four forms of epithelioma—a superficial, a rodent, a deep-seated, and a papillomatous, and figures the first three. In all early interference is strongly insisted on, while the various means which have been adopted are well described. He prefers the term trichophytosis to tinea tonsurans or tinea circinata, which is a pity, as it adds to confusion in nomenclature, without any corresponding advantage. The three last plates represent lichen planus and lichen ruber. Those devoted to the former could not be more lifelike or truthful; that of lichen ruber is too small. It has evidently been intended to represent the mode of grouping of the papules; hence a full-length figure has been given, showing

the lesions on the chest and abdomen. A large plate of one of these regions would have served the same purpose, and been of much more value. The author differs from most observers in doubting the identity of lichen planus and ruber, and his arguments have, we think, some weight. More extended experience can alone decide the question. On the whole, this collection of photographs is of great excellence, and the completed work will be of the utmost value to all practitioners of medicine.

Antiseptic Surgery: An Address delivered at St Thomas's Hospital, with the Subsequent Debate; to which are added a short Statement of the Theory of the Antiseptic Method, a Description of the Materials employed in carrying it out, and some Applications of the Method to Operations and Injuries in different Regions of the Body, and to Wounds received in War. By WILLIAM MACCORMAC, M.A., F.R.C.S.E. and L. London: Smith, Elder, & Co.: 1880. With 60 Illustrations.

Chirurgie Antiseptique: Principes, modes d'application, et résultats du pansement de Lister. Par le Dr JUST LUCAS-CHAMPIONNIERE. Deuxième Edition, complètement refondue, avec 15 figures dans le texte. J. B. Baillière et fils. Paris, 1880.

WHATEVER be the views held by different surgeons as to the merits of Listerism proper, with its spray-producers and other strange devices for the destruction of pre-existent germs and the prevention of their entrance, all surgeons are agreed that in the last twenty years great strides have been made in the scientific treatment of wounds. Cleanliness, drainage, avoidance of tension, have all done much; and while the followers of Lister who have published their results claim that by drainage and antiseptics they can rob surgery of its terrors, Callender, Spence, and Bryant have shown statistics as astonishing, procured by simple cleanliness, careful selection of time of operation, skilful performance, and careful nursing, without any strictly antiseptic precautions. Lately, in America, Markoe has recorded an extraordinary series of successful cases obtained by drainage of the freest, and almost reckless disregard of germs.

Still, whatever his own special method, every intelligent surgeon will wish to follow the progress of antiseptic dressings of all kinds, and the works which head this page will enable him to do so with ease and pleasure. On the foundation of his own very able address and the discussion, most unequal and discursive, which followed it, Mr MacCormac has raised a most readable and well-arranged account of antiseptic dressings of various kinds, most on the Lister principle. It is well done, up to date, and should

be bought and read by every hospital surgeon and teacher of surgery.

Dr Just Lucas-Championnière has greatly improved his second edition. It also contains all needed and most recent information as to Listerism.

The Hypodermic Injection of Morphia: its History, Advantages, and Dangers. By H. H. KANE, M.D. New York: Charles L. Bermingham & Co.: 1880.

THIS treatise, as its title indicates, embraces the whole subject of subcutaneous injection, in so far, at least, as morphia is concerned. It is based on the experience of 360 physicians, communicated in answer to a series of questions submitted to them by the author, who appears to have left no stone unturned in the conscientious investigation of his subject. Our own opinion is, that his book has been unduly lengthened, and so falls short of the impression it ought to produce, by an excessive quotation of replies and opinions from correspondents not specially qualified for guiding the public mind. In a future edition Dr Kane would do well in cutting down these portions of his book, and endeavouring to give the results rather than the process of his inquiries.

The impression conveyed to our mind by the chapters on "Death," "Narcotism," and "Syncope," is, that unless the practitioners from whose experience these portions of the book are culled deserve to be credited with rashness, carelessness, and inattention to cleanliness in a quite exceptional degree, the sooner hypodermic injection of almost any drug is abandoned, the better will it be for our unfortunate patients. We have heard no such alarming occurrences mentioned, or even hinted at, in this country; and we therefore cherish the hope that the sources of danger have been exaggerated, and that greater care—suggested by a perusal of this really valuable book—may lead to important reforms.

We may mention that, to obviate the danger attendant upon injection of the drug *directly* into a vein, Dr Kane has invented, and draws attention to, a tourniquet for common use, to be applied betwixt the seat of puncture and the heart, when the former happens to be on one of the limbs.

He very sensibly urges the importance of not trusting exclusively to *atropia* as an antidote to an over-dose of *morphia*, but to use simultaneously all the antidotal measures at our command. What these are he does not very clearly specify; but he advises that they should all be carried, along with the syringe and the morphia, in order that the dangers sometimes arising may be promptly met. All this preparation is fitted, surely, to alarm the patient, and, at the same time, to prevent most practitioners from venturing on a remedy so fraught with danger.

As usual, the happy invention of Dr Alexander Wood, whom we always regarded as the originator of the hypodermic mode of treatment, is claimed by others. We see no adequate reason to change our mind, from the brief historical sketch given in the opening chapter.

This notice has already exceeded our allotted space, and we regret, therefore, having no room for a series of questions which the author has addressed to the profession at page 9. We advise them to purchase and read the book; and this will enable them to supply the required information with more intelligence and precision.

Headaches: their Nature, Causes, and Treatment. By W. H. DAY, M.D. Third edition. J. & A. Churchill: 1880.

MEDICAL practitioners in Scotch cities built on the continental plan of numerous *flats* or floors, who are tall and rather slender in bodily conformation, and whose daily duties enforce on them the climbing of numerous flights of stairs, the aggregate diurnal ascent and descent of which might fairly compare with the scaling of Ben Nevis, are only too familiar with attacks of headache, nervous or congestive, which prostrate them every now and then, compelling rest, starvation, and even the imbibition themselves of some of those medicaments which it is their *role* to introduce into the circulation of their patients. It would be interesting to ascertain if members of the profession in England and Ireland, who are not exposed to such strain on the respiratory and nervous systems inseparable from the peculiar civic architecture of Scotland, were more exempt in their own persons from the malady in question,—a disease which, of course, is infinitely more prevalent among the laity, and which calls so frequently for the utmost tact, knowledge, and experience of the doctor. The extensive demand for a really good treatise on the subject is shown by the publication of the third edition of Dr Day's work which, with its twofold division of intra-cerebral and extra-cerebral caused headaches, gives matter for profitable study. The first division comprises eleven heads: 1, the headache of cerebral anemia; 2, of cerebral hyperæmia; 3, sympathetic; 4, dyspeptic, or bilious; 5 (*a*), congestive, (*b*) plethoric; 6, headache from exhaustion or minute tissue change = nervous; 7, nervo-hyperæmic; 8, arthritic; 9, toxæmic; 10, organic or structural; 11, that of advanced life. The first chapter goes over the views and experiments of Burrows, Durham, Kussmaul, and Tenner, as to the changes in the vascularity of the cerebral blood-vessels during active mental excitement and sleep; the symptoms of defective circulation are depicted, and the tendency to seek relief from alcoholic stimulants so frequent in such cases, more especially in females. The hyperæmia of brain, the symptoms of

which are familiar to habitual students, and the efficacy of the *ice cap* in subduing them, make the second chapter sufficiently attractive, only the discrimination between the hyperæmia and plethoric cephalalgia is, we venture to submit, not so distinctly made out in actual practice as is made to appear in the author's pages, and much of what is found in the chapter on nervous headaches might have been included in some of the other categories; and if the views of Prout be held as established, the toxæmic and rheumatic forms might well be classed together. The same may be said of that arising from syphilitic periostitis. The division on neuralgia will amply repay perusal, as containing much of what must be known to the practitioner if he would effectually secure the confidence of the numerous sufferers from that wide-spread malady by treatment *tuto, cite et jucunde*.

The closing disquisition on the headaches of childhood and early life might very suitably be published in a separate form for the benefit of parents, teachers, and members of school boards. The appended formula of prescriptions merit attention, as well combined for the most part, and, with a very few exceptions, free from the antiquated vice of polypharmacy.

The Physiological and Pathological Relations of the Voice and Speech (being the Lumleian Lectures for 1879). By JOHN SYER BRISTOWE, M.D. Lond., M.R.C.P. Published by David Bogue.

THESE lectures are three in number, and were delivered before the Royal College of Physicians, London, during March and April 1879.

The first treats of the physiology—the mechanical and acoustical principles—of the functions of the voice and speech; and in it the author enters fully into the question of articulate sounds, as represented by letters, and considers these sounds to be very incompletely and inaccurately thus represented.

In the second lecture, among other matters, there are some very interesting remarks upon the subject of the difference between ægophony, bronchophony, and pectoriloquy.

Dr Bristowe thinks no author on this subject, as Laennec, Skoda, Walshe, Gee, etc., has fully realized the importance of closely distinguishing between the sounds evolved at the rima glottidis and the articulate utterances which are developed in the mouth, nose, and fauces. In his opinion, by bronchophony should be understood the conveyance to the ear of sounds developed at the rima glottidis, while pectoriloquy is the similar conveyance of sounds developed above the rima glottidis—a point which deserves the careful attention of those who devote themselves more especially to the minute physical examination of the chest.

In discussing laryngeal paralysis the author points out and illustrates by a series of cases, how, with the hoarseness or aphonia caused by pressure upon the recurrent laryngeal nerves by tumours, aneurisms, etc., there is, in his opinion, seldom dyspnoea and cough, but that the latter symptoms are more often a result of direct pressure upon the trachea itself,—a most important matter, and to be kept in mind in considering the question of tracheotomy for their relief.

This lecture finishes with a few remarks upon stammering, but nothing particularly here arrests attention.

The third lecture is devoted to those affections of speech which are dependent on lesions of the higher nervous centres, and usually called “aphasia.”

The lectures are interesting, are the outcome of careful thought, and well worthy of perusal by those especially interested in the question of voice and speech.

The Surgeon's Pocket-Book: An Essay on the Best Treatment of Wounded in War. Specially adapted for the Public Medical Services. By Surgeon-Major J. H. PORTER, late 97th Regiment, late Assistant Professor of Military Surgery, etc. Second Edition, revised and enlarged, with 152 Illustrations. Charles Griffin & Co.: 1880.

WE reviewed the first edition of this excellent work soon after its appearance in 1875. This edition is corrected and added to up to 8th September 1879. The preface is dated Cabul, where, to the great loss of the service and of military surgery, the talented author has since died of disease induced by exposure and hard work. Few men have done more good work in a short time than Surgeon-Major J. H. Porter, and it is likely that his little handbook will continue to be useful to generations of army surgeons.

Student's Primer on the Urine. By J. TRAVIS WHITTAKER, M.D. J. & A. Churchill. London: 1880.

THIS little book gives a clear and good account of the different conditions of the urine, and will be found very useful to students and practitioners. The etchings on copper of the appearances presented by the urine are truthful and fine, and are done by the author himself.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LIX.—MEETING VII.

Wednesday, 5th May 1880.—Dr P. HERON WATSON, *President, in the Chair.*

I. *Dr Sanders* showed a case of ICHTHYOSIS HYSTRIX (*verrucosa et cornuta*). Matthew G., aged 13, from Middlesbro', was admitted into Ward 23, Royal Infirmary, Edinburgh, on 23d April, on account of peculiar horny growths over his trunk and limbs. Patient is a pale, scraggy boy of somewhat Simian type of countenance, ill-developed mentally as well as physically, though apparently more from neglect than from actual mental deficiency. He has been in very poor and unhygienic circumstances, and during his gestation his mother suffered great hardships and privation. At birth several bruised and abraded surfaces were seen on his thighs and left foot. These healed up, but eight weeks after birth the growths began to show themselves at, and spread from these patches till they covered the whole body and limbs. The disease has been pretty stationary for the last three or four years. There is no history of syphilis, but two of his mother's brothers died of phthisis. The eruption is distributed pretty equally over head, trunk, and limbs, reaching its greatest development on the feet and hands. It consists of purely epidermal growths of horny hardness, varying from a dirty yellow to a dark brown in colour, and from a small pin-head, giving a rough crisp feeling to the skin, up to horns one and a quarter inch long. In shape the medium-sized growths are bluntly conical, marked with fine longitudinal and transverse grooves, and rough on the top. The skin around passes abruptly from natural skin into horny material, and is sometimes slightly hyperæmic, but mostly quite normal, although in a few instances carried up mechanically between two adjacent growths. They are all freely movable on the skin. The small and some of the medium size can be scratched or pulled off with little pain and no bleeding, leaving either a slightly hypertrophied epidermis still remaining, or a red surface of true skin covered by a very thin layer of epidermis. The larger the growth the more firmly is it fixed to the skin. In one or two instances a little pus and sebaceous-looking material collects under the horn and separates it. The larger growths sometimes separate of their own accord gradually from the skin and fall off. The relation to the nails is various. In some of the digits the nail is healthy, merely distorted, in others it is partly incorporated with the new horny growth; in some it is

displaced, dried, and shrivelled up, in others altogether replaced by the new material. The hair is dry and somewhat scanty. On the feet the growths are largest, the dorsal aspect of the toes being nearly hidden by large irregular masses of horn. On the back of the third right toe is a horn one and a quarter inch long, about half an inch broad, and a quarter of an inch thick, curved to nearly half a circle. Along the margins of the feet and on the soles the growths are flattened by pressure and more continuous, forming rounded chains. On the upper parts of the feet are several curved horns about three-quarters of an inch long. Their size and number diminish towards the body. On the trunk they are from the size of a pin-head to a split pea. In parts shielded from pressure, as the groins, cleft of nates, and axilla, they are slender and clubbed. There is a slight tendency to symmetry on the trunk, the eruption running in bands transversely. The right side of the abdomen is almost free, the dense crop of the left side beginning abruptly at the middle line. The growths on the hands come next to those on the feet in size and density of distribution. They form large barnacle-like masses, arranged mostly in well-marked lines along the postero-lateral borders of the fingers. Some occur on the palms and pulp of the fingers. Behind the ears the growths are softer and more like dried sebaceous matter. There are a few small nodules over the face, neck, and scalp. On the vertex is a patch, about the size of a florin, of thick, white, hard, and hairless skin, said not to have resulted from any accident. The skin not covered by the growths is either normal or changed, the changed skin being wrinkled, dry, atrophied, darkened in colour, and covered by a thin epidermis, as if from an extensive superficial cicatrix, the traces most probably of former growths. The growths are quite painless. The boy eats and sleeps well, and walks about, though with slightly hobbling gait. He has been, previously to admission here, treated with iodide of potassium, arsenic, cod-liver oil, and tonics internally; externally with carbolic acid, acetic acid, tincture of iodine, iodoform, tar ointment, baths. He was under the care of Dr Tilbury Fox last spring, and shown by Dr Crocker before the Clinical Society of London, as noticed in the *Lancet* of 10th May 1879 and *British Medical Journal* of May 24.

II. *Dr Foulis* described an instrument which, for want of a better name, he called the GLOSSOTILT. It consists of a piece of metal—nickel silver—about ten inches in length, half an inch in breadth, and about the twelfth of an inch in thickness. At each end the instrument resembles very closely the handle of an ordinary tablespoon. Instead of seizing the tongue with a pair of catch-forceps and dragging it forward, as is usually done when a patient's breathing is arrested during the administration of chloroform, Dr Foulis proposes that one of the curved ends of the glossotilt should be passed down over

the dorsum of the patient's tongue as far as the base, and then the instrument should be pressed backwards in such a way that it acts as a lever. The base of the tongue and the hyoid bone are thus made to project forwards. When this takes place, the epiglottis, being closely connected with the hyoid bone, is drawn well away from the *rima glottidis*, and the aryteno-epiglottidean folds are rendered tense. The instrument is passed into the throat with the greatest ease if the patient's head is allowed to fall well back over the end of the operating table; or the head may be made to fall back by passing an arm under the patient's neck and raising it. Dr Foulis maintains that the only effectual way of raising the base of the tongue, of raising the epiglottis, and of making tense the aryteno-epiglottidean folds, at one and the same time, is to act on the base of the tongue and the hyoid bone in the manner he has described.

III. *Dr A. G. Miller* showed several specimens of FRACTURES, which were made post-mortem when demonstrating to his class: 1. Two femora, exhibiting intra and extra capsular fracture of the cervix. Both were effected by manipulation. The bones showed advanced oily degeneration of the cancellated structure of the cervix. 2. Two examples of fracture of the radius near the carpus. They illustrated the following points:—The line of fracture was within one inch of the articular surface; the displacement of the distal fragment was dorsal; the periosteum was torn through on the palmar, but entire on the dorsal aspect. Both fractures were effected by forcing the hand backwards when in a state of complete supination.

IV. *Dr Allan Jamieson* exhibited a drawing in water-colour of a WARTY INDURATION of the skin, a rare late tertiary syphilide. There was strong historical evidence that the patient, now 78, contracted syphilis 25 years ago. Latterly she had become much addicted to alcoholic stimulants; and Renault had shown that indulgence in alcohol exerts a powerful influence in producing syphilitic lesions of the late tertiary type. On the backs of the hands and on the legs were flat dusky-purple tubercles, and these represented the first stage in the production of the patch of eruption delineated. The sketch was taken from the inside of the left thigh, where there was a thickened, rough, greenish-grey warty patch, twice the size of the palm, and fissured here and there. Its margins were dusky red, and the whole area was elevated several lines above the level of the skin. Similar but smaller patches extended diagonally over the front of the thigh and on the outside of the buttock, their long diameter corresponding with that of the limb. Outlying reddish, flat, glancing tubercles, resembling those on the hand, were also seen. There was no tendency to ulceration or to interstitial absorption, as shown by cicatrization or pigmentation. The case was interesting as showing the influence

of age in determining the imitative character of syphilis. Warty growths were common in advanced life, and here syphilis had evoked this proclivity in an aggravated form. Dr Jamieson had been unable to find any similar case in any of the atlases to which he had had access; but no doubt the president, with his large experience, had met with such. In Cullerier's atlas there was a case somewhat like this on the face, but there was ulceration. Half drachm doses daily of potassium iodide were being given, and it was believed the supply of alcohol was stopped. There was not time yet for any change for the better.

V. *Dr Sidney* exhibited six specimens showing the changes in what might be called a case of "INDIGO SPUTA," occurring in a woman aged 36, who suffered from chronic bronchitis, and had recently passed through a slight attack of pneumonia of right lung. Twenty days after admission to the hospital the sputa was noticed to be peculiar in colour, and on further observation it was found that, although it was a colourless frothy sputa when first expectorated, it assumed in the course of an hour a slightly bluish tint, which gradually deepened until it became, in about six hours, of a very deep indigo colour. This again changed into a dark green, and in about fourteen hours became a dirty black. The sputa was acid at first, but when coloured was neutral. Exclusion of light and of air had no effect in arresting the changes, and microscopic examination could give no explanation. He was quite unable to explain the reason of the change in colour, but would endeavour to make further observations.

VI. *Dr P. Heron Watson* showed—1. A BLOOD CYST, consisting of two sacs, completely encapsuled, removed by him from the first interspace of the dorsum of the hand in a young lady. It had been there since birth, and had in childhood been treated as a naevus. These blood cysts frequently originate in naevi in which, by a degenerative change, the communication with the circulation becomes spontaneously interrupted. In some cases a further change by calcification ensues. 2. The PARTS removed by him that day in excision of the knee-joint in a young lady who for some years had suffered from disease of the joint, originating in the hard tissues. The suppurating area was limited to the intercondyloid pit. 3. TWO KIDNEYS, removed in the autopsy from a patient who was admitted to Chalmers Hospital with catarrh of the genito-urinary apparatus. The one kidney was small and shrivelled (cirrhotic), with its pelvis occupied by a putty-like paste. The other, much enlarged, was a good specimen of catarrhal nephritis. Its surface was studded by small abscesses, no doubt containing micrococci, constituting a quasi-diphtheritis of the kidney.

VII. *Dr Grainger Stewart* read NOTES OF A CASE OF MOLLUSCUM, by Surgeon-Major Kenneth Macleod, M.A., M.D.; and NOTES OF

A CASE OF A RARE FORM OF ELEPHANTIASIS, by David J. Playfair, M.B., which appears at page 18 of this Journal.

Dr Allan Jamieson said that Dr Stewart's second case, which he had had an opportunity of seeing while under Dr Stewart's care, reminded him somewhat of a form of skin disease of which only two cases had so far been recorded, one by Kaposi, the other by Pospelow in the current number of the *Vierteljahresschrift für Dermatologie und Syphilis*. These had been named lymphangioma cutis tuberosum multiplex, and in them there were similar, though smaller, outgrowths from the skin, which, when cut through, showed numerous irregular spaces lined by a delicate endothelium, which were believed to be dilatations of the capillary lymphatics. Like Dr Stewart's case, there was no enlargement of the lymphatic vessels generally, but, unlike his, both were congenital in their origin. The Society were much indebted to Dr Stewart and the authors for having brought forward two such interesting and unique cases.

VIII. Dr John Smith read a paper on DISEASES OF THE ANDAMAN ISLANDS, by Dr Brander, which will appear in a future number of this Journal.

Dr Cadell was interested in Dr Brander's account of syphilis in the Andaman Islands. He thought the author wrong in supposing that the disease had lately been planted in the virgin soil of these islands. Had such been the case, the disease would have shown itself in a severer form than that described. Diseases had been ranged under the head of syphilis which had no proper place there,—for example, purulent conjunctivitis and corneitis, the latter only occurring in hereditary syphilis in the interstitial form. The absence of alopecia struck him as peculiar where syphilis was so common, and the fact that the Andamanese shaved their heads did not explain why their eyebrows and lashes resisted the effects of the disease. No mention was made of affections of mucous membranes, which are constant and marked symptoms of syphilis. Much of the disease referred to syphilis might be accounted for by dirt and debility.

Dr J. Blair Cunningham.—Whatever the merits of the question as to whether the disease was really syphilis or not, and whatever the manners of the Andamanese may be, we have learned from the rapidity with which the disease spread that their morals are at least of by no means a high standard. The Society should be obliged to Dr Brander for his paper. He is but a junior officer, but evidently does not intend the grass to grow under his feet. I may add, Dr Brander has lately sent home to the Museum of the Royal College of Surgeons a skeleton of an Andamanese woman, which shows the race to be diminutive but well formed. The head is peculiar, the interparietal diameter being excessive. This skeleton Dr Brander had to dig up by stealth, as the natives of this group

of islands are very particular about the disposition and care of their dead.

Dr A. G. Miller said it was unpleasant to criticise a paper when the author was not present to reply. Still he thought that *Dr Cadell* was in the right in stating that the cases reported as primary and secondary syphilis were not what *Dr Brander* supposed them to be. It was very difficult to record cases exactly when there were no clerks and other reliable assistants to take notes of the cases on the spot, and therefore it was quite natural to suppose that, in writing the interesting paper to which they had all been listening, *Dr Brander* may have forgotten or mixed many facts which, if more fully recorded, might have thrown more light on these cases of supposed syphilis.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XXXIX.—MEETING VIII.

Wednesday, 24th March.—*Dr ANGUS MACDONALD, President, in the Chair.*

I. *Dr Barbour* read his paper on CASES OF CARCINOMA OF THE FEMALE PELVIC ORGANS IN PROFESSOR SIMPSON'S WARDS DURING THE CURRENT SESSION, which appears at p. 36 of this Journal.

The President remarked on the interest of the communication, and hoped it would elicit a valuable discussion.

Dr Underhill had listened with interest to *Dr Barbour's* paper, illustrated as it was with such valuable specimens. Cancer was unfortunately so common that all must have been struck with the great differences in course, duration, and symptoms which different cases presented. On looking at the two specimens of cancer shown them to-night, and seeing them well cleaned, and only exhibiting some excavation of the cervix and uterine cavity and a fistula, there seemed to be really little reason why a woman should die from such a lesion. Yet in such cases the disease often ran an exceedingly rapid course. He had recently under his care a young lady, æt. 29, who illustrated this point. She had been at first under *Dr Matthews Duncan's* care for cancer of the vagina. A caustic application was made by *Dr Duncan* three or four times, but the disease, in spite of this, spread very rapidly. When she passed into his (*Dr Underhill's*) hands, fungating masses sprouted from the vaginal orifice, preventing urination, and damming up the discharge in the vagina. She lived only five months, dying, like one of *Dr Barbour's* cases, from blood-poisoning. Her sufferings were dreadful. The tumour was a rapidly growing soft cancer. He felt indebted to *Dr Barbour* for his paper and beautiful specimens.

Dr Charles Bell had listened with deep interest to *Dr Barbour's* admirably drawn up paper, and he has examined his beautiful

specimens with great satisfaction. In regard to treatment, he remembered a case under Professor Christison's care where he was asked to examine, and found the cervix a little destroyed. He was afterwards told that it was thought the disease was checked. On examination, however, it was found that the cervix was nearly gone. The treatment adopted was the administration of hyoscyamus and conium. He wished to know how pain was subdued in Dr Barbour's cases?

Dr James Carmichael wished to hear the experience of the Fellows as to the duration of life in cancer cases. He was interested at present in a case of a patient 70 years of age, who had had cancer of the rectum, involving the uterus high up, for six years. She had been often seen in consultation, and all were agreed as to its cancerous nature. In addition, a piece which had been discharged was found on microscopic examination to confirm the clinical diagnosis. The patient's chief suffering now was from tenesmus, coming on several times in the twenty-four hours. The treatment adopted was opium in large doses, so that the patient is now an opium eater—a practice quite justifiable in her instance.

Professor Simpson said that one of the patients was under observation from July till February. When first seen, the disease was not far advanced, as the cervix was only indurated. It was not a fungating cancer, but the course was rapid. In answer to Dr Carmichael's query, the result of his experience had convinced him of the fact that age had a considerable influence, so far as rapidity of the course of the disease was concerned. Thus, in a case of cancer in a woman of 30 the disease might last one year, while a woman of 60 would live two years probably. This was illustrated by Dr Underhill and Dr Carmichael's cases. Age, however, was not the only element. There are cancers and cancers. In small-celled epithelial cancers development was slow, and there was no marked tendency to necrosis and decay. When the cells were large and multi-nucleated, then there was speedy infiltration and more rapid decay. The blood soon became degraded, there was rapid glandular infiltration, and a short history. The seat of the carcinomatous disease had also an influence on its growth. His impression was that its progress was slower in the rectum than in the uterus, and slower in the cavity of the uterus. He was not so sure about the relations farther down. When it began at the os internum he believed it developed more rapidly, and what he had seen there were encephaloid, with great pain and bleeding and rapid breaking down of tissue. In the vagina primary cancer was rare but rapid. In the special case given to-night he had diagnosed vaginal cancer on rectal examination. The vaginal examination was so difficult that he was in doubt whether it was purely vaginal or cervical too. The inguinal glands were affected in this case, and of course this never happened in uterine cancer. One curious fact was that the vaginal walls varied in their liability to disease, as

fibroma and carcinoma were more frequent on the anterior wall. In the case of carcinoma of the bladder the diagnosis was rendered absolutely correct by dilating the urethra. Cancer patients died from various causes, viz., flooding, septicæmia, etc. Two conditions favoured the latter, viz., the blood was more watery, making absorption more rapid, and thrombosis in the veins farther impaired the blood. Pelvic inflammation had little influence, as even when perforation occurred there was little evidence of it.

Dr Gordon had found that the symptom of pain varied. In some only flooding existed, and the disease was far advanced before any pain came on. This was unfortunate, as the patients were not seen early enough for the whole disease to be removed. He wished to know if the cervix (infra-vaginal) could be removed, and with what success.

The President said the success was fair in early cancer. The disease often returned, because it was difficult to remove it entirely, since, unfortunately, it ran up into the cavity of the cervix more highly than in the outer part of it. It could be removed by knife—galvano-caustic—actual cautery, or gouge. *Dr Marion Sims*¹ had proposed a new method of removing it thoroughly by scissors, steel curette, and knife, the hæmorrhage being restrained by plugging the vagina with plugs of cotton wool soaked in a solution of sulphate of iron. After arrest of hæmorrhage the plug was removed from the cavity of the cervix and replaced by pellets of cotton wool steeped in a saturated solution of chloride of zinc. The vagina was then plugged tightly with pellets of cotton wool steeped in a solution of carbonate of soda. The plug is removed from the vagina on the following day, but the zinc wool is allowed to remain in the cervical cavity for several days. He watches for its recurrence, removes what does recur, and in this way, he says, is able to keep a patient in health for years who otherwise would not have lived as many months. He had listened with great pleasure to *Dr Barbour's* first paper; he was one of their youngest Fellows, and ought to be held up as an example to others. There was, he was sorry to observe, something like a lack of activity among their young Fellows, so that *Professor Simpson*, *Dr Underhill*, *Dr Croom*, *Dr Hart*, and himself were rather sick of hearing their own articles, and were glad to see *Dr Barbour* making his first appearance. The mode of removing the pelvis described to-night was new to him, but he was glad to hear of it, as it promised to be a valuable one, and opened up quite a new field of exact observation in uterine pathology. A great deal could be said on treatment; but that question was not raised to-night. *Dr Simpson* had explained most of the other points. Vaginal cancer was rare. Two years ago he had a patient with this form, where it ultimately involved the uterus, and the patient died from the disease blocking up the ureters and causing uræmia.

¹ *American Journal of Obstetrics*, July 1879.

This was a known cause of death in cancer, but had not come out in the discussion.

Dr Barbour thanked the Society for their kind reception and for the information he had received. For relief of pain, hypodermic injection of morphia was used.

II. *Dr Charles Bell* then read his paper on the TREATMENT OF PUERPERAL FEVER BY THE MURIATED TINCTURE OF IRON, which appears at page 50 of this Journal.

The President would be glad to hear remarks on this important and all-absorbing question.

Dr Bruce on different occasions had used this treatment, but not with the same amount of success, although the doses were full. In one case, last year, of puerperal scarlet fever he gave it a fair trial, but the patient died. He would be inclined to use it still, although he had been somewhat disappointed in the results, particularly as it could be employed simultaneously with other remedies. Bad cases of puerperal fever get well sometimes under various modes of treatment, while many others terminate fatally in spite of all we can do.

Dr James Young said that in scarlet fever, diphtheria, etc., iron might be considered the correct treatment, and he invariably relied on it in almost every case, likewise in erysipelas. In cases of puerperal fever he generally held to the treatment by calomel and opium if there was local inflammatory action. In a recent case, when the patient (a primipara) had recovered from puerperal fever, she was seized with diphtheria on the seventeenth day: the iron treatment was commenced, with Condy gargle. The patient made a good recovery.

Dr A. D. L. Napier had some hesitation in criticising a paper like *Dr Bell's*, seeing that it came from a senior. The two cases seemed to him to be different. The first was simply one of tedious labour terminated by forceps, with ragged perineum, etc. This was followed by metritis, rigors, etc., showing existence of pyæmia. In this case the iron treatment was good. The objection to it was, however, that it was not potent enough. When a patient had a temp. of 104° and a pulse of 130, the iron treatment was risky. In quinine they had a drug, tonic, like iron, which reduced pulse and temperature. The second case was one of high temperature, due probably to severe pain, in which iron could have no specific action.

Dr George Dickson had used sulpho-carbolate of soda with apparent benefit. Lately he had been using salicylate of soda with good results.

Dr Simpson agreed with *Dr Napier* that *Dr Bell's* cases were not conclusive as to the use of iron. When there had been much loss of blood, then iron was useful. They could not depend on it, however, to bring down pulse and temperature. He was indebted

to Dr Bell for the hint as to the value of the Edinburgh preparation of the muriate of iron.

Dr Underhill thought Dr Bell had overlooked the use of Condyl's fluid and cleanliness locally. It was a very important factor in the treatment.

The President was glad to see Dr Bell back among them again. He had been in the habit of using iron occasionally in such cases, but, after what he had heard, would be more and more inclined, when occasion permitted, to give the drug a fair trial. In one case he saw with Dr Andrew, where the patient had a very prolonged labour, ultimately instrumental, on account of a narrow pelvis and complicated by a very extensive perineal tear, he had been much pleased with the results derived from its employment. The patient did well for three or four days, but then the temperature went up to 104° , the patient became deeply jaundiced, and, in fact, seemed dying. She, however, recovered completely under the use of the perchloride of iron. But then it sometimes fails, as well as quinine and other medicines, in this dire disorder. He had always taught that in puerperal fever we had no specific, once the disease became established, and no reliable prophylactic except extreme cleanliness and the diligent use of antiseptics. Aconite, opium, and other drugs were useful aids.

Dr Bell thanked the Fellows for the reception accorded to his paper. He had found the tincture of the muriate of iron most beneficial in cases of a similar character to the one he had just reported. It seems to purify the blood, and the impurity is apparently carried off by the kidneys. He was glad to hear Dr Young's case, as it bore out his experience that puerperal fever, like diphtheria, was a zymotic disease. He had never met with a case of diphtheria where there was not a bad smell. He was quite satisfied that the pulse and temperature fell under the use of the tincture. In erysipelas he had frequently seen it fall from 120 to 80 in the course of a few hours, when the tincture was given in doses of thirty drops every two hours. The great error in giving the tincture was timidity in giving the proper dose. The preparation employed should be the muriated tincture of the Edinburgh Pharmacopœia. In a late paper Professor Spence had ridiculed its use in erysipelas, but he himself had never seen it fail. In one case the tinct. ferri perchloridi did no good, but the muriated tincture (Edinburgh Pharmacopœia) cured the patient in four days. Thirty drops should be given every two hours. The late Drs Begbie had used it, and they placed implicit confidence in it as a remedy for erysipelas. In regard to Dr Underhill's remark as to Condyl's fluid, he seems to have overlooked the fact that it was recommended by Dr Bell in the treatment of the first case he had just read. He was not likely to undervalue the use of this important disinfectant, as it was he who introduced it into hospital practice. As for Professor Simpson's observation, Dr Bell begged to remind him of the case of puerperal fever which he handed over to his care in

the Maternity, saying it was hopeless ; it was put under the treatment just recommended, and the patient left the hospital in health.

MEETING IX.

Wednesday, 14th April.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Dr J. Jamieson* showed a HYDROCEPHALIC FŒTUS with SPLIT PALATE, which had recently occurred in his practice. The child presented the breech. The arms were brought down with difficulty, and the head extracted only after perforation.

II. *Dr Croom* showed a UTERUS with FŒTUS at the seventh month of gestation. The patient had died suddenly. On post-mortem, pyelitis was found.

III. *Dr Hart* showed for Dr M'Watt, of the Royal Infirmary, Glasgow, the UTERUS from a patient who died eight hours after delivery. The history was that she was admitted under Dr Scott Orr's charge, with acute Bright's disease, at the eighth month of pregnancy. The labia were swollen and partly gangrenous, so that it was impossible to examine her satisfactorily, especially as the patient refused to take chloroform. Hot-water douches were employed for a fortnight, but without effect, so far as the induction of labour was concerned. Ultimately chloroform was administered, when Dr M'Watt passed a sound between uterus and membranes for five inches without rupturing the latter. Labour came on twelve hours after, when a dead fœtus, breech presentation, was expelled. Eight hours after delivery the woman died, with symptoms of pulmonary embolism. On post-mortem examination the uterus was removed. When laid open, the placental site could be distinctly seen, and it was noted that the cervical canal was of its normal length and the os internum quite distinct. This showed clearly that the cervix had not been used up at all by the growing fœtus.

IV. *Dr Macdonald* then read his paper on THREE CASES OF PARAMETRITIS, WITH OBSERVATIONS ON ITS DIAGNOSIS AND TREATMENT, which appeared at page 1060, vol. xxv., of this Journal.

Dr C. E. Underhill had listened with great pleasure to Dr Macdonald's valuable paper. The subject was one that had not been brought before the Society for some time ; and as Dr Macdonald had given them both a record of cases and remarks on the diagnosis and treatment, he hoped they would have a thorough discussion on these points. The distinction Dr Macdonald had drawn between parametritis and perimetritis—viz., that the effusion in perimetritis was higher up, and made the fornix less shallow than in parametritis—was a valuable one. As to diagnosis, one point was that normal pelvic conditions were sooner recovered after para- than perimetritis. In the latter, some adhesions may

remain for years. He quite agreed with Dr Macdonald in his remarks on the early opening of the abscess. When pus was present in large quantity, it might open into the bladder or intestinal canal, or more rarely into the peritoneum, and therefore it should be evacuated just as if it were in any other part of the body. He noted that Dr Macdonald had spoken, in one of his cases, of a tumour in Douglas' pouch, where he afterwards described it as being parametric. He had listened with great pleasure to the paper.

Dr Croom agreed with Dr Underhill in his appreciation of Dr Macdonald's paper and his interesting cases. As to the causation of such, he thought that a Hodge pessary could do no possible harm if properly fitted. The great point was to see that it should never take any bearings on the bony pelvis. He agreed with Dr Macdonald as to early opening of abscesses.

Dr James Young had listened with great pleasure and interest to Dr Macdonald's valuable paper. It contained a great deal of useful information, and much that could not be learned in books. Whether it was fortune or misfortune, he had at present several cases of parametritis under treatment. In some the parametric inflammation was complicated with retroversion of the uterus, in which a Hodge pessary could not be endured, inasmuch as it caused pain and increased the inflammation. The treatment by Simpson's glycerine plugs and hot-water injections was of much benefit. Blisters might be necessary. In cases of retroversion Hodge's pessaries were invaluable, but frequently it was necessary to prepare the uterus for its use.

Dr Hart thought the rules for fitting a Hodge had not been given sufficiently precisely to-night. The pessary should be shorter than the posterior vaginal wall, and should have a sigmoid curve to suit it. Transversely it should be broader above than below, but the greatest breadth should be such as to pass the vaginal orifice easily. It should not, accordingly, extend from side to side of the vagina, far less take any bearings on the bony pelvis. He thought the terms parametritis and perimetritis not so good as pelvic peritonitis and pelvic cellulitis.

Dr James Carmichael wished to know if it was necessary to use the uterine sound in the diagnosis of peri-uterine inflammations. He had always been taught it was dangerous to do so.

Dr Gordon thought it was important to make free and early incisions in the event of suppuration. He remembered a case of perimetritis where the patient died suddenly when at stool.

Dr James Ritchie said it was well known that in pneumonia they always had a superficial pleurisy, and in pleurisy a superficial pneumonia. He supposed the same thing occurred in para- and perimetritis. He wished to know if, after diagnosis of a retroflexion, they should at once replace it and apply a Hodge, or first prepare the uterus, as it were.

Dr George Dickson had at present a case of pelvic inflammation

with the exudation low down, uterus fixed, and as much shortened. It was thus a case of parametritis, according to Dr Macdonald's definition.

Dr Angus Macdonald thanked the Fellows for the too flattering reception accorded to his paper. They, of course, named the lesion parametritis or perimetritis according to the chief tissue affected. In regard to the question of pessaries, he had touched on it because it was suggested by one of his cases, and we know for certain that a good deal of harm is done by want of knowledge or care in the employment of them. He had adopted the terms parametritis and perimetritis because they were properly formed from a philological point of view, whereas the terms pelvic peritonitis and cellulitis were not. In regard to the question as to the use of the sound, he would simply remark that in neither case was there *uterine* irritation sufficient to contraindicate its employment.

Part Fourth.

PERISCOPE.

MONTHLY RETROSPECT OF OBSTETRICS AND GYNÆCOLOGY.

By ANGUS MACDONALD, M.D.

THE FEMALE PERINEUM, ITS ANATOMY, PHYSIOLOGY, AND PATHOLOGY, is the subject of a paper by Dr T. Gaillard Thomas of New York, in the *American Journal of Obstetrics*, April 1880.—The author calls attention to certain diagrams ordinarily employed to convey to the student an idea of the anatomy of the perineum, which are altogether misleading. The vagina never gapes as generally represented, unless distended by some foreign body, but is collapsed, the anterior wall resting on the posterior. The canal of the vagina presents in antero-posterior section a double curve, its posterior wall being convex at its lower part, concave at its upper part. The lower part of the perineal body supports the anterior wall of the vagina, and with it the bladder, preventing their prolapse, while it is itself supported by these structures, but mainly by the perineal muscles on which it rests, and by whose contraction it is thrown upwards and forwards against the anterior vaginal wall. Removal of the perineal body renders the pelvic viscera liable to grave distortion. The posterior vaginal wall prolapses, followed by the anterior rectal wall, so that the superior vaginal cul-de-sac is effaced, and the cervix uteri dragged on from behind. The anterior wall of the vagina, with the bladder, may also be prolapsed, and the uterus, losing the support of the bladder, likewise comes to occupy a low position in the pelvis. It will be easy to comprehend that in this manner the perineal body acts the part of

an inverted wedge fixed at its base, upon the integrity of which depends the support of organs which would otherwise tend to fall downwards and drag with them organs still higher placed. The perineal body may lose its efficiency from constitutional feebleness or feebleness resulting from prolonged distention, from subinvolution, from senile atrophy, or from laceration.

THE OBSTETRIC TREATMENT OF THE PERINÆUM is the subject of a paper in the *American Journal of Obstetrics* for April 1880, by Dr Garrigues of New York. The writer calls attention, first of all, to certain anatomical errors that have arisen in regard to nomenclature. The entrance to the vulva has been used to imply the same part as the introitus vaginae, whereas the former is external to the latter. The fourchette is not a fold of mucous membrane, but of skin, and is formed by the approximation of the two labia majora posteriorly. The perineum extends from the anus to the posterior commissure. The "perineal body" occupies that space enclosed by the divergence of the posterior vaginal from the anterior rectal wall. In describing perineal ruptures, writers generally class them as (1) those which do not reach the sphincter ani; (2) those which reach its outer margin; (3) those which extend partially through it; (4) those extending into the gut. But some of the bundles of the sphincter ani are continued as bundles of the constrictor vaginae. A laceration through the middle of the perineal body severs first the constrictor vaginae, next the sphincter ani externus, and finally the sphincter ani internus. In regard to prophylaxis in rupture of the perineum, the writer recommends that ergot should never be given during labour. He uses the drug in every confinement, but not before the placenta is expelled. He then uses it for four or five days to counteract septic absorption and insure good involution. A thorough evacuation of the rectum is likewise important in avoiding injury to the perineum. For the same purpose the left lateral position of the patient during the passage of the child through the vulvar opening should be advised, as thereby the abdominal contents are allowed to rest on the bed instead of on the perineum. Under ordinary circumstances the passages are lubricated by glairy mucous secretion; but in cases where the waters have long escaped, and the passages are hot and dry, inunction with oil or other material is truly conducive to the safety of the perineum. The weakening of the propulsive force by the administration of chloroform is of high value as a protection against laceration. Opinions differ as to whether manipulation, either with the hand or with instruments, directed against either the maternal or foetal parts, should be employed to preserve the integrity of the perineum, and also as to how these are to be employed. By supporting the perineum at the proper time,—*i. e.*, when the head is distending the vulvar orifice, when the greatest circumference of the head is passing,—and pro-

vided we limit our support to a moderate pressure with the flat hand placed so that the fold between the thumb and the index finger comes to rest on the posterior commissure, the manipulation is not only innocuous, it is highly useful. We thus supply to the thin elastic vulvar ring a second elastic layer, and a thick elastic ring does not burst so readily as a thin one. As to displacement of the perineum over the head, the writer believes that it can do no good, whether directed backward or forward. In precipitate labour it is, he holds, quite legitimate practice to retard the progress of the head by pressing directly backwards to allow the perineum to be slowly dilated; and for a similar reason, in forceps delivery, the blades are removed as soon as the head has reached the floor of the pelvis. With the same end in view, some attempt to rectify the position and attitude of the child—*e.g.*, when the head is propelled in an oblique direction, the fingers or even forceps are used to bring the sagittal suture into line with the vulvar orifice. Probably such alterations should be left entirely at nature's disposal. Pressure on the presenting part, either from the perineum or through the rectum, to bring forward the occiput is often advantageous, provided care is taken not to injure the child's eyes, or force sufficient to injure the clitoris is not used. The perineum has a second risk to withstand in the passage of the shoulders, and experience teaches that this danger is by no means imaginary. The sudden expulsion of the shoulders after the perineum has become somewhat used to the narrow neck may sufficiently explain the occurrence of perineal rupture. Such danger may be best avoided by pressing back the posterior shoulder, allowing the anterior to pass first. The operation of episiotomy is sometimes had recourse to, with the view of substituting a small clean incision in a convenient position for a larger, rougher rent in a less convenient locality; but its expediency is questionable, as it does not with certainty preclude a further perineal laceration. The condition of the perineum should always be ascertained after delivery, and deep lacerations ought to be united immediately; but there is a large number of lacerations deep enough to indicate artificial union, yet not considerable enough to warrant the expenditure of time and pain that suture entails. These the writer proposes to secure by "serres-fines," small self-holding clamps, which are easily applied without giving the least pain. When the rent has been of any great depth, suture is recommended for restoration of the perineum. For this operation the patient is placed in the lithotomy position, with a sponge in the vagina to prevent blood trickling down from the uterus during the closure of the wound. Silver wire stitches are preferred, and their ends are left of sufficient length to allow of their being all included together in an india-rubber band, which hangs down clear of the wound, avoiding irritation from the cut ends of the wire. The number of sutures should not be too much restricted. The after-treatment employed is washing out the

cavity of the vagina twice daily with carbolic solution, using the catheter if necessary, and giving nutritious diet in good quantity, with laxatives when necessary, instead of low diet and permitting constipation to be kept up for a fortnight, as is practised by many gynecologists.

FIVE SUCCESSFUL CASES OF OVARIOTOMY are reported by Dr Whyte of Elgin in the *Medical Times and Gazette*, 17th April 1880. In none of his cases has Dr Whyte adopted the Listerian precautions. The first case of the series was originally recorded in the same journal for September 1867. Previous to operation the cyst was tapped, and 4 or 5 pounds of a dark viscid fluid removed. Adhesions of recent formation were found to exist pretty extensively. The pedicle, which was short, was secured by clamp. The cyst was multilocular, weighed $11\frac{1}{2}$ oz., and its fluid contents between 4 and 5 lbs. Sickness and tympanitis set in on the third day, but under small doses of liq. strychniæ they were entirely relieved by the sixth day, and a rapid recovery followed. The second case was a tumour of about seven years' growth, occurring in a woman of 64 years of age. Some time previous to the operation 12 pints of a dark-coloured fluid were withdrawn from the cyst by tapping, but, rapidly reaccumulating, removal of the tumour by abdominal section was decided on. No abdominal, but some pelvic adhesions, were encountered. The pedicle, which was between 2 and 3 inches broad, was tied with silk at two different points in its length, each ligature embracing more than half the width of the pedicle. The pedicle was dropped after being washed in carbolic acid and glycerine, the wound closed by deep and superficial carbolized silk ligatures, and dressed with carbolized lint, with a thick pad of cotton wool secured over it by a flannel binder. The tumour, which was for the most part unilocular, contained about 16 lbs. of fluid. With the exception of slight flatulence, which was relieved by drop doses of liq. strychniæ every hour, the patient never had a bad symptom. The third case was that of a young healthy woman, aged 19, married for a few months. The only symptoms present besides abdominal enlargement were shortness of breath and frequent micturition. By aspiration 2 pints of clear fluid were drawn off, and next day, the patient foolishly getting out of bed, there was an escape of fluid into the peritoneal cavity. Ovariectomy was agreed upon. A quantity of ovarian fluid escaped on opening the peritoneum. The tumour was partly composed of a multilocular cyst and partly solid. It weighed 21 lbs., including its fluid. The wound was closed and dressed as in the former case, the pedicle having been secured by clamp. The recovery was uninterrupted, and the patient was able to take a long journey by rail at the end of the third week. The fourth tumour was a large semisolid multilocular one, which adhered extensively to pelvic and abdominal walls, as well as to intestines

and omentum. The pedicle was secured by clamp, the abdominal cavity sponged out carefully with 1-40 carbolic solution, and drainage-tube inserted. Morphia hypodermically was used in all the cases to control reaction after operation. This case also recovered rapidly, and a few months afterwards the patient became pregnant. Case five was a simple one, and was chiefly of interest in being complicated with pregnancy, which was not interrupted by the operation. The tumour with its contents weighed 41 lbs.

THE ALLEGED DANGERS OF INTRAUTERINE INJECTIONS OF PERCHLORIDE OF IRON IN CASES OF POST-PARTUM HÆMORRHAGE form the subject of a paper which appeared in the *British Medical Journal*, 24th April and 1st May 1880, by Dr F. Pollard of London. The author has, after short reference to each, drawn up in tabular form all the cases, thirty-five in number, which have been published or even alluded to in this country during the last ten or twelve years, in which death has followed the injection of solutions of perchloride of iron into the uterus for primary post-partum hæmorrhage. The author proposes to divide them into three groups:—1. Those in which the operation was unsuccessful in arresting the bleeding, the hæmorrhage either continuing or recurring. In two of the eight of this class the operation was not properly performed, but in three of them the iron appeared to have actually failed. (In such cases the author suggests the employment of swabbing of the uterus with undiluted strong solution of the perchloride.) 2. Those in which the perchloride arrested the hæmorrhage, but at a stage too late to prevent death from exhaustion. These are eleven in number. 3. In fourteen cases there might be some grounds for connecting the fatal result with the use of the iron. (*a.*) In one of these cases pain, which followed the operation, was considered to turn the scale against the patient, already exhausted. (*b.*) In three cases sudden collapse and death occurred at the time of the operation, and in two of these the escape of the solution from the cavity of the uterus was known to have been insufficiently provided for. In the third case the patient was at the point of death when the operation was performed. (*c.*) In ten cases metritis, peritonitis, pyæmia, or septicæmia was the cause of death. It is to this last class that the author mainly directs attention, and questions whether their results may be fairly attributed to the use of the iron injection. Post-partum hæmorrhage predisposes powerfully to septicæmia; and, moreover, perchloride of iron is a strong disinfectant, so that coagula formed by iron salts are peculiarly aseptic. Nor can it be maintained that the perchloride has caused inflammation of the uterus in the cases where such occurred, as the patients have almost invariably done well for three or four days. Hence the author maintains that there is no inherent risk in the employment of the perchloride of iron, and that its scientific application affords in some cases the only chance of saving life.

ABNORMAL ADHESION OF THE FUNIS TO THE PLACENTA, WITH ACCIDENTAL HÆMORRHAGE AND ABORTION, is the subject of an article in the *American Journal of the Medical Sciences*, No. 157, January 1880, by Dr Garnett, Columbia. The patient was a lady 24 years of age, who was pregnant for the second time, at the fourth month, and who then began to suffer from slight uterine hæmorrhage. This was treated as ordinary accidental hæmorrhage; but it recurred frequently at intervals of a few days, and ultimately uterine contraction supervening, a five months' fetus was expelled, floating within an unruptured sac of membranes, with the placenta firmly attached on its foetal aspect to the umbilical region of the child. On opening the sac a normally-developed five months' fetus was exposed, with the funis, apparently healthy, twice encircling its body just above the pelvis. The umbilical region of the fetus was thereby drawn closely into contact with the surface of the placenta, between which and the cord there had been established a firm adhesion of $1\frac{1}{2}$ inches breadth, so that it was impossible to move the child without making traction on the placenta also. The uterine surface of the placenta had an appearance as if one-third of it had been recently detached, but the remaining two-thirds were glazed and studded with the remains of fibrinous clots, indicating earlier separation. From those facts an explanation of the frequently recurring intractable hæmorrhage may readily be deduced.

THE TREATMENT OF ENDOMETRITIS.—A paper on this subject by Dr Hickinbotham appeared in the *Birmingham Medical Review*. The treatment of inflammation most approved by the surgeons of the present day is rest, both mechanical and physiological, and altered position, whereby gravitation empties the distended vessels. But with the physician these means cannot always be carried out, e.g., he cannot stop a heart's action to favour the cure of pericarditis; and so in the case of the uterus, even in the unimpregnated state, there is a constant alternation of hyperæmia and relative anæmia, and its condition is easily affected by the workings of the mind. Of the acuter forms of endometritis the writer does not propose to treat; it is to that form of subacute endometritis occurring in weak, ill-nourished women after childbirth that he proposes to draw attention. Until a recent date astringent vaginal injections were the only means employed for the cure of such cases; but when the use of the speculum became fashionable, so did the use of the nitrate of silver application to the cervix uteri. Still more recently, intrauterine cauterization has become the favourite method. But all of these methods the writer holds to be in the main most unsatisfactory. The plan which he advocates, and which he has found much less disappointing, is, first, to improve the general health and give tone to the nervous system; secondly, to rest and soothe the irritated periphery by the intrauterine application of

anodynes, especially of morphia and belladonna. Where there is much thickening, local scarification and the glycerine tampon are used, and if aching continue after acute symptoms have subsided, blistering over the sacrum is recommended. Mechanical and functional rest, so far as possible, are also enjoined. The chief internal remedies employed are phosphorus, iron, and sometimes strychnia and bromide of potassium.

A SUCCESSFUL CASE OF GASTROTOMY IN EXTRA-UTERINE PREGNANCY is recorded in the *Obstetrical Journal* for 15th April, 1880, by Mr Lawson Tait. The case was that of a worn-out-anæmic woman of 30, who reported that she had not menstruated for six months. She suffered from a large tumour in her abdomen, reaching well above the umbilicus, fixed in the pelvis, extremely painful, and feeling uniformly solid and non-fluctuating. The uterus, of normal size, was bent backwards below the tumour, and was adherent to it by its anterior wall. The distances from the umbilicus to each of the two crests of the ilium differed by half an inch. From these and other facts hæmatocele was diagnosed. A month later the symptoms suddenly became greatly aggravated. The pain had increased, and the tumour grown to about double its former dimensions; but the increase appeared due to the formation of a cyst on the upper surface of the original mass. Fluctuation was distinct in this newly-formed tumour. An incision of about 4 inches long, extending downwards from the umbilicus into this secondary tumour, proved it to contain fresh blood-clot. Its floor was found arched by the encroachment of the original tumour, and lest this latter should be of a malignant nature the external wound was closed. The peritoneum was not opened. No relief of suffering resulted from this procedure. In a few days the cyst cavity was found to be suppurating, and severe surgical fever eventually set in. On the sixteenth day a hard mass was felt projecting at the base of the wound, which on being removed proved to be a piece of a foetal skull. Subsequently the foetus was removed piecemeal, in a macerated and rotten condition, from the same opening. The placenta was not interfered with, but the cord came away in pieces, and still later placental masses were extruded at intervals. The patient ultimately did well.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

JABORANDI IN MUMPS.—Dr Testa (*Il Morgagni*) has employed this remedy in the form of infusion in five cases, and draws from his practice the following conclusions:—1. Jaborandi is an efficient remedy in mumps. 2. The efficacy is explained by its hydragogue

and especially its sialogogue properties. 3. Administered early, it will prevent the development of the affection. 4. It may prevent the metastases which are not infrequent.—*The Medical Press and Circular*, 19th May 1880.

BROMIDE OF ETHYL.—The *Gazette Médicale de Paris* reports that M. Terrillon stated at the Société de Chirurgie that he had employed the bromide of ethyl about a dozen times in operations with the thermo-cautery. In a minute or two a white patch indicating cutaneous anæsthesia is produced, and on the pulverization being continued, insensibility of the tissues is produced to the depth of two centimètres. The production of the white patch is not essential, as anæsthesia may exist when it is absent. The results have proved very satisfactory; but in two cases M. Terrillon did not succeed, owing, as he believes, to the pulverizers which he employed having too small a jet.—*The Medical Press and Circular*, 9th June 1880.

RHUS TOXICODENDRON.—Dr John A. Henning (*Cincinnati Lancet*) calls attention to the value of the above-named drug. It admirably meets certain indications. Thus it removes the dull, heavy aching pain above the eyes in cases of catarrh. It speedily modifies the burning pain of erysipelas. Combined with gelsemium, it increases its power to reduce temperature. In forms of inflammation accompanied by a burning, stinging pain, it quickly removes the pain. In spinal irritation, with enfeebled circulation or spinal anæmia, it is an excellent remedy combined with nuxvomica. It is also indicated in passive congestion of the brain, or in meningitis. Its general action, when taken in proper doses, is as a laxative, diaphoretic diuretic, and particularly as a stimulant of the nervous system. The dose is from five to fifteen minims in half an ounce of water (*The Detroit Lancet*, January 1880).—*Chicago Medical Journal and Examiner*, May 1880.

BORACIC ACID IN INFLAMMATIONS OF MUCOUS MEMBRANES.—We learn from the *Maryland Medical Journal* for April 1880 that at the meeting of the Baltimore Clinical Society, 21st February, Dr J. Shelton Hill reported a case of gonorrhœa in which he employed an injection of boracic acid (half a drachm to four ounces). He next saw the patient four days after, and found him perfectly well. Since that he had used it in a primary attack, increasing the strength to ten grains to the ounce. The disease, which had lasted six days, was cured in one week. The patient was a letter-carrier, and continued his employment during the treatment. He has also employed the agent by inhalation in follicular tonsillitis, with surprising results. So also in post-nasal catarrh. Finally, he obtained most satisfactory results in a distressing and painful cystitis, due to long-standing resilient stricture, by injections, morning and night (after drawing the urine), of an eight-grain

solution. The patient had required the constant use of anodynes, which he administered himself hypodermically. Any attempt to walk caused severe paroxysmal pains and desire to micturate. Eight days ago he began the injections; the urine was then so tenacious that it adhered to the vessel when inverted; the night before he had been up to pass his urine thirteen times. The next night this was reduced to seven times, and there was far less pain. On the second night after the treatment the number was four, and no opium was used for the first time in six weeks. On the fourth night there were two micturations. Since the 18th only one injection daily has been employed. On the 19th the patient was able to take a long walk without any bad results. The patient had been two months under treatment. At first only a filiform bougie could be introduced, and the stricture had to be dilated. Various astringents had been used for the cystitis, including zinc, acetate of lead, opium, nitrate of silver, etc.; but the patient grew steadily worse until the employment of the boracic acid,—then the improvement was immediate. The injections were made through a small flexible catheter, about No. 2. Specimens of urine passed at various stages of the treatment were exhibited, in which the change from a dark brown purulent fluid to a clear one without deposit was very striking.—*Medical and Surgical Reporter*, 15th May 1880.

TREATMENT OF ITCH.—In a clinical lecture which appeared in *Gaz. des. Hop.*, February 10, 1880, Prof. Hardy states that he has since 1852 employed in the treatment of the itch the ointment composed of one part of lard, a sixth part of flowers of sulphur, and a twelfth part of subcarbonate of soda. So efficacious have proved thorough and almost violent frictions with this, continued for twenty or thirty minutes, especially at the natural bends and folds of the skin, that the cure is absolutely certain. Among from 4000 to 5000 adults so treated at the St Louis, in only one instance was a repetition of the frictions needed. The ointment, after the rubbing, should be left on for several hours, or all night, without washing. Next day an emollient bath may be taken, which may be repeated every twenty-four or forty-eight hours for a week.—*Medical and Surgical Reporter*, 8th May 1880.

PERISCOPE OF OTOLOGY.

By DR KIRK DUNCANSON, Surgeon to the Ear Dispensary, 6 Cambridge Street; Assistant-Surgeon, Eye Infirmary; Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

SCHOOL BOARD EDUCATION FOR THE DEAF AND DUMB.—The care and educational development of dumb children is a matter of equal interest to the medical profession and to the philanthropist.

Recognising the fact that these children, who required more care and training than those not so affected, actually received much less, the School Board for London organized special classes whereby the 340 dumb children that were then scattered over London might have such care and education as were needful. In September 1874 the first class was opened, and made use of by those living near. It was found, however, that many children were prevented from attending on account of difficulty in going to and fro. The Rev. Mr Stainer then started the plan of temporary houses where the children could be brought together as weekly boarders, living near the schools, and being paid for by their parents. The first house of this kind was opened in September 1875, at No. 74 Pentonville Road; and they have been so eagerly sought after that another in Bethnal Green was soon full. These are for the north and east of London. It is still much needed to start similar houses in the south and west, but these are obliged to wait for want of funds. The differences between the old and new plans are at once obvious. In the former it was only after the deaf and dumb child had attained the age of nine years that it could be received into any of the schools, and then under most unfavourable circumstances—in large numbers, packed closely, with intellects stunted for want of the training that an ordinary child would have had years earlier. Can it be wondered that a large percentage of these deaf and dumb children turned out to be idiots? On the other hand, the new plan provides education from the age of four years, affords home training, instructive amusements, and healthful exercise, good food, and, what is more important, the responsibility is not taken off the parents' hands, as in all cases they are required to pay the cost of the children's food. By this means the rates are not in any way increased, and the children are preserved from accidents to which, in their home lives, they are specially liable. Mr Stainer has adopted the oral and the manual methods of instruction. During thirty years of practice he has found that, to do full justice to the children's different capacities, they must be fully instructed in both methods; these he calls the "dual" method,—and it is a combination of the German or lip system with the French or "sign" system,—thus putting this most afflicted class in as thorough communication with their friends in the outer world as is possible. From last year's report we see that the expenditure in the first home, No. 74 Pentonville Road, for the year was £476, 3s. 10d.; towards that the parents paid £175, 18s. 4d. A sale brought in £38, 3s., thus leaving £263, 2s. 6d. to be paid yearly by contributions from those interested in the work.—*Brit. Med. Jour.*, 29th May 1880, p. 822.

Von Tröltzsch maintains that, of the 38,489 deaf mutes in Germany, less than one-half are congenital, and that in one-fifth of the cases early and energetic treatment of the aural affection would have prevented the occurrence of that condition (Prof. von Tröltzsch,

A Petition to the German Government, etc.).—*Archiv für Ohrenheilkunde*, vol. xiv. p. 151.

Dr Knapp states that 6.53 per cent. of his ear patients have had primary acute purulent inflammation of the middle ear. He has collected 27,350 cases of ear disease treated in America, and finds 6.08 per cent. belong to this class. The percentage in Europe is somewhat larger, 6.27. Dr Knapp reports 182 cases. At least 80 per cent. were cured; 4.39 per cent. terminated in chronic otorrhœa. Four cases, 2.19 per cent., terminated fatally, three with cerebral symptoms, the fourth with diphtheria. Dr Knapp has seldom resorted to *paracentesis* of the membrana tympani. He has not opened the mastoid cells in any of his cases, but has frequently made an incision down to the mastoid with good results. He lays great stress upon rest in the treatment of these cases, and keeps his patient in bed (H. Knapp, *Primary Acute Purulent Inflammation of the Middle Ear*).—*Archives of Otolology*, vol. viii. No. 1.

Dr J. O. Green reports an interesting case of otitis intermittens, in which a suppurative inflammation attacked either ear alternately, and was always accompanied by malarial symptoms. The cause was believed to be blood-poisoning from sewer-gas or defective drainage, and it was not until the patient was removed from the infected premises that she recovered (J. Orne Green, *Otitis Intermittens*).—*American Journal of Otolology*, April 1879.

Dr Gruening reports two cases of acute otitis media, with mastoid complications, in which he trephined the mastoid, with immediate relief and rapid recovery of the patient. In both cases there had been no cessation of the flow of pus from the external auditory canal. The symptoms were high fever, redness, swelling, and tenderness of the mastoid, which was the seat of violent pain radiating towards the temple and occiput (E. Gruening, *On the Indications of Opening the Mastoid Process in Cases of Otitis Media Purulenta Acuta, with Implication of the Mastoid Cells*).—*Archives of Otolology*, vol. viii. No. 1.

Politzer calls special attention to adhesions and ultimate ankylosis of the articulations of the ossicles. These usually occur in the course of an inflammation, but occasionally without a trace of a diseased process, in the mucous lining of the middle ear. Politzer says that the statements made by prejudiced persons, that ruptures of the drumhead have frequently been observed after inflation of the middle ear by his method, are disproved by the following facts:—1st, Ruptures of the drumhead have been observed, not only after inflation by Politzer's method, but also after Valsalva's experiment, and after catheterization of the Eustachian tube. 2d, That ruptures of the drum-membrane are very rare is evident from the fact that only fourteen cases have been reported in

thirteen years. 3d, That ruptures of the drumhead are not attended by injurious results is evident from the fact that in almost all the published cases improvement of hearing followed the rupture. These ruptures were most frequently observed in atrophic and calcific membranes, and in those thinned by cicatricial tissue (A. Politzer, *Lehrbuch der Otorhinolaryngologie*, vol. i. p. 92, etc.).—*Report on the Progress of Otology*, by David Webster, M.D., of New York, in the *Transactions of the American Otological Society*, vol. ii. part 3.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

LYMPHANGIOMA TUBEROSUM CUTIS MULTIPLEX. — Pospelow of Moscow records an instance of this extremely rare skin disease, of which only one example had been previously related, that by Kaposi in Hebra's and his Handbook, and illustrated in the latest fasciculus of Hebra's Atlas. In both cases the affected person was a female, unmarried, and otherwise in excellent health. The disease was congenital; but in Pospelow's, to an account of which the following is confined, the tubercles increased in number under observation. Over the whole surface of the body and face were scattered round or oval tubercles, varying in size from a barley-corn to a hazel-nut (on the abdomen). Their colour was rose and pale violet, due to venous stasis in the skin, though there was no visible dilatation of the vessels. The epidermis covering the swellings was normal, and they passed imperceptibly into the surrounding skin. Viewed laterally, they appeared translucent and as if filled with some fluid. Transfixed, their substance was gelatinous, and like mother-of-pearl. Only a very little blood and an insignificant quantity of cloudy fluid escaped. When compressed between the fingers, a single swelling felt tolerably compact; pushed down vertically, it reminded one of a capsule of gutta-percha full of air, which by further pressure disappeared in the subcutaneous tissue. To the examining finger the sensation was imparted of an oval or round aperture, with ill-defined margins, into which the swelling had sunk down. When pressure was removed the projection reappeared on the surface. The mechanism of this vanishing under pressure and reappearance at its removal was exactly like umbilical hernia in children. The skin generally was pale yellow, here and there dusky pigmented in map-like areas, resembling chloasma uterinum. There were also numerous papillomata of the genitals. The diagnosis was made by exclusion, the most notable distinctive points being the translucency of the swellings and their capability of being pushed beneath the level of the skin into the subcutaneous tissue; this marked them off from mollus-

cum fibrosum. Sections showed a tissue with increase of areolar fibres, and perforated by numerous openings, some round, others lymph capillaries dilated, and with an irregular contour; these were lined with a nucleated endothelium, and contained a mass of lymph corpuscles and a few blood corpuscles. The latter had apparently got in during the process of cutting the section. Pospelow's diagnosis was confirmed by Kaposi, Auspitz, and Neumann, of Vienna.—*Uachtelz, f. Dermatologic und Syphilis*, 1879, 4th heft.

ON THE MECHANISM OF THE SO-CALLED STRIE OF PREGNANCY.—Langer has studied the white glancing atrophic lines found not only on the abdomen, but also on the lower extremities of pregnant women. As the epidermis over these is entire, they must depend on some solution of continuity or other change in the cutis. The interlacing of the areolar tissue bundles of the corium is not an irregular felting, but these are so arranged as to form rhombic meshes, whose long axis on the trunk corresponds in some degree to the direction of the ribs. The cutis can therefore be more easily stretched in a direction perpendicular to the long axis of these rhombs than in the reverse. When the distention of the abdomen is slight the stretching occurs in the above-named direction, and is soon compensated. It is otherwise when the stretching is considerable, if, in addition, the elasticity of the tissue is destroyed. Then the texture of the cutis assumes permanently a different arrangement. Thus sections parallel to the surface show fibres in lines almost side by side in the striae, and it is to this that the silky glance which these exhibit is due. There is no solution of continuity, but a permanent alteration in the arrangement of the tissues, owing to tension. The papillae and vessels experience similar changes; the former are flattened out, the latter run across the striae in lines more or less straight. At Langer's suggestion, Krause and Felsenreich have investigated the direction of tension of the abdomen during pregnancy, and found that beneath the umbilicus tension takes especially the transverse direction round the umbilicus in all directions alike, and at a distance of ten centimètres beyond in a radiating direction. The silvery white lines follow in their arrangement the same law.—*Anzeiger d. Wiener Gesellschaft d. Aerzte*, 1879.

ACTION OF PYROGALLIC ACID.—Neisser regards pyrogallie acid, under certain circumstances, as an intense poison for the human organism. The left side and breast of a man aged 34, affected with universal psoriasis, were energetically rubbed with pyrogallie acid ointment, then a thin layer was spread on the surface, then covered with gummed paper, and finally bandaged (as Auspitz remarks, "a somewhat active procedure"). Two hours after the patient shivered and had vomiting of mucus and diarrhoea. Next day he was collapsed; T. 101°; urine opaque, black, acid, 1037, free from albumen.

On the following day he died, with occurrence of repeated rigors. The urine exhibited the highest degree of hæmoglobinuria; by boiling deposited thick flakes, and formed a dark-brown coagulum on its surface. The sediment showed no blood corpuscles, but numerous dark-brown, drop-like, glancing structures, partly shapeless, partly in longer or shorter cylinders. The spectroscope exhibited the characteristic lines of hæmoglobin in D and E. The tubules of the kidneys were filled with brown or black pigment masses. There were also seen spheres of larger or smaller size, resembling drops of gum, exactly like the sediment found in the urine. Besides increased number of white corpuscles, the blood contained many fragments of red ones. Death arose from extensive destruction of the red corpuscles and the passage of colouring material into the blood plasma, whence the excretion of hæmoglobin by the kidneys and urine. Experiments on animals confirmed this view. Neisser concludes:—1. Since pyrogallie acid can destroy the blood corpuscles and induce hæmoglobinuria, it must be used with caution even in small doses. In large doses it acts as an intense poison, and, in particular, because it so alters the constitution of the blood as to render its circulation impossible. It is an open question how far its direct influence on the nervous apparatus is to be taken into account. 2. The employment of pyrogallie acid, therefore, in therapeutics should be given up so soon as we can command an equally efficacious remedy. It is suitable for the treatment of psoriasis and for the destruction of lupous and carcinomatous neoplasms. For psoriasis of the trunk and extremities, notwithstanding many local disadvantages, we must avail ourselves of the innocuous chrysophanic acid. Pyrogallie acid can be employed for psoriasis of the face and head, since the small amount which is needed for this purpose has been shown to be non-injurious.—*Zeitschrift f. Klin. Med.*, bd. i., 1879; and *Viertelj. f. Dermatologic und Syphilis*, 1879, 4th heft.

PERISCOPE OF SYPHILOLOGY.

By FRANCIS CADELL, F.R.C.S.E.

ON THE TREATMENT OF GLEET AND THE PREVENTION OF STRICTURE BY IRRIGATION OF THE URETHRA.—In the *Lancet* for 15th May 1880 Mr Reginald Harrison has a paper on this subject. He combats the notion of Dr Otis and others that gleet is merely a symptom of stricture, and propounds the following conclusions:—1. That the large majority of strictures, excepting those caused by injuries to the urethra, are preceded by more or less chronic gonorrhoea or gleet; 2. That the most frequent seat of stricture corresponds with that of gleet—namely, the subpubic or deeper portion of the urethra. Assuming these conclusions to be true, not from his own personal observation only, but from that of others who

have had sufficient opportunities of forming an opinion, it certainly looks as if the persistence of gleet and the formation of stricture were due to the imperfect means hitherto adopted for dealing with the bulbous and membranous portions of the urethra when chronically inflamed; in fact, that the disease escaped treatment altogether. He questions whether injections with an ordinary glass syringe ever succeeds in reaching the deep portions of the urethra, and thus describes the treatment by irrigation. He effects this by means of a small Higginson's syringe and a sufficiently resisting vulcanized indiarubber catheter. The patient twice or thrice a day douches his urethra by this instrument with a solution of sulpho-carbolate of zinc, in the strength of about half a teaspoonful to a pint of water, or with other suitable astringent. The catheter should not be larger than a No. 6 (English gauge), so as to allow plenty of room between it and the walls of the urethra, in which the injected fluid can circulate.

CONGENITAL PHIMOSIS WITH PREPUTIAL CALCULUS.—This case occurred in the Hitchin Infirmary, under the care of Dr O. H. Foster. On 17th February 1880, B. M., æt. 3, was admitted. His mother stated that since he was five months old she had noticed that he had a difficulty in passing water, which had gradually increased up to the present time; latterly he had almost constant desire to make water, which dribbled away from him, especially if he walked about. There had been a gradual enlargement of the end of the penis, the extremity of which, on admission, presented to touch a stony hardness very unusual in cases of ordinary phimosis. On 23d February Dr Foster performed circumcision, and found a calculus in a cavity formed between the glans and the tightly constricted preputial orifice. The calculus was about the size and shape of a sparrow's egg; its weight was fifty grains; its surface presented a uniform, smoothly polished, phosphatic appearance; on section it was clearly simply a phosphatic concretion, without any nucleus.—*Lancet*, 15th May 1880.

ORAL CHANCRE.—Dr G. H. Fox has a paper on this subject in *The New York Medical Journal* for February 1880. Oral chancre generally attacks the lips. It may be wholly seated upon the vermilion surface, or it may encroach on the adjacent skin. When the chancre is situated upon the inner or mucous surface of the lip, it usually presents a smooth or eroded surface; while, on the contrary, if seated on the outer or cutaneous portion, it is commonly encrusted. Very often a chancre will present a crust upon one-half of its surface, viz., that portion which is exposed to the air, while the remaining half, which is kept moist, will appear smooth. There seems to be little difference in the frequency with which the respective lips are attacked, although statistics seem to indicate that in men the upper lip, and in women the lower lip, is more frequently the seat of the lesion. It is certain that the lower lip is the

more subject to abrasions and fissures, which would render it prone to become infected. Labial chancre may vary in appearance according to its position on the lip, its stage of development, and the general health of the patient. Marked swelling and induration, with superficial erosion or crusting, are its characteristic features. Chancre upon the gum is extremely rare. In Jullien's compiled lists we find that, among 73 oral chancres, 56 were on the lips, 10 upon the tongue, 4 in the mouth, 2 on the uvula, and 1 on the gum. When chancre affects the tongue, it is commonly seated upon its tip. The occurrence of chancre in the deeper portions of the oral cavity has been questioned and even denied, but cases have been reported by competent observers of chancre of this region occurring in the persons of nurses, glass-blowers, and others. There is no reason why the syphilitic virus should not be carried in a variety of ways to this locality, and there is no proof that this or any other portion of the body possesses any insusceptibility to syphilitic infection. Doubtless, mistakes in the diagnosis of deep oral chancre have occurred, and patients presenting these rare and unique lesions of syphilis should be subjected to a most rigid examination. The lymphatic engorgement accompanying oral chancre is generally marked, and is of the highest importance, since by its presence the character of the sore is often diagnosed. The neck is usually affected chiefly upon one side, although glands upon both sides may be swollen. Labial chancres are attended with swelling and induration of the submaxillary glands, those near the angle of the jaw being usually involved by a chancre of the upper lip, while in a case of chancre of the lower lip the glands beneath the chin are generally affected.

Part Fifth.

MEDICAL NEWS.

HYDRATE OF CHLORAL.—Dr H. H. Kane, of New York City, U.S.A., specially requests members of the profession with any experience whatever in the use of the hydrate of chloral to answer the following questions, and give any information they may possess with reference to the literature of the subject:—1. What is your usual commencing dose? 2. What is the largest amount you have administered at one dose, and the largest amount in twenty-four hours? 3. In what diseases have you used it (by the mouth, rectum, or hypodermatically), and with what results? 4. Have you known it to affect the sight? 5. Have you ever seen cutaneous eruptions produced by it? 6. Do you know of any instances where death resulted from or was attributed to its

use? If so, please give full particulars as to disease for which given; condition of pulse, pupils, respiration, and temperature; manner of death; condition of heart, lungs, and kidneys; general condition, age, temperament, employment, etc., etc., etc. If an autopsy was held, please state the condition there found. 7. Have you seen any peculiar manifestations from chloral—as tetanus, convulsions, or delirium? 8. Do you know of any cases of the chloral-habit? If so, please state the amount used, the disease for which the drug was originally administered, the person's age, temperament, and the present condition of the patient. Physicians are earnestly requested to answer the above questions, in order that the resulting statistics may be as full and valuable as possible. All communications will be considered strictly confidential, the writer's name not being used when a request to that effect is made. Address all letters to Dr H. H. Kane, 366 Bleecker Street, New York City.

OBITUARY.

DR ALFRED SWAINE TAYLOR.

THIS eminent medical jurist died of chronic heart disease on 27th May. In 1870 he retired from his lectureship at Guy's Hospital, and a few years after from the investigation of criminal cases. In 1878, when the Crown authorities here proposed to avail themselves of his experience in connexion with the well known Chantrelle case, the veteran replied that he had determined never to revisit the forensic arena.

Dr Taylor might well look back with pride on his professional career. Early devoting himself to medico-legal studies, and by long residence on the Continent perfecting his knowledge of foreign languages, so that the mines of information hid in treatises and journals were made available for his prelections, he in 1831 began his lectures at Guy's Hospital. There, along with Addison and others, he upheld the reputation of this distinguished school, and for a long course of years attracted students by his name, occurring as it did repeatedly in the courts of law, and by his numerous text-books. In the following year he was appointed joint-lecturer on chemistry.

He early projected a treatise on medical jurisprudence, and in 1843 published the first volume in octavo of what promised to be an extensive work. In 1844, however, he was induced by Mr Churchill, the London publisher, to throw his materials into the form of the well-known manuals, and since then the work has been reissued in repeated editions, the last—the tenth—bearing the date of April 1879. The size of this book necessarily limited the amount of information on the numerous topics which are

generally included under the title of medical jurisprudence, and in 1865 Dr Taylor published a large octavo volume which contained a complete digest of the whole subject, and for the first time he was able to treat at length of identification and of medical evidence in all its bearings. A second edition of this work in two volumes, constituting what may be termed an encyclopædia of medical jurisprudence, and the crowning effort of his life, was published in 1873. Dr Taylor's connexion with the chemical lectureship at Guy's, and his popularity with the English coroners, led to his being largely entrusted with analyses in cases of poisoning. The experience thus gained in chemical testing, and the rapid accumulation of interesting toxicological cases, led to his writing a special treatise on poisons. This appeared in 1848, and subsequent editions in 1859 and 1875, forming a closely printed volume of nearly 900 pages. As the last edition of Christison on *Poisons*—the fourth—was published in 1845, Taylor was left without a competitor, and at once identified himself as the best exponent of British medical jurisprudence, and his volumes became the standard text-books in our schools of medicine and courts of law.

In addition to his rapidly increasing experience and his acquaintance with foreign literature, Dr Taylor possessed a calm, judicial mind which admirably fitted him for weighing the import of evidence and estimating the value of recorded cases. He never indulged in sensational writing; his style was clear, and his matter was compressed into the smallest possible compass. It is no wonder, then, that in every court of law in the kingdom he was appealed to as the leading authority in medical jurisprudence, and that it became a matter of necessity for every medical witness to master what Taylor had to say on the special case. He was a most conscientious author, subjecting his various works to most careful revision, so that the latest edition, embodying his most matured opinions, had always to be consulted. Indeed, we know of no more profitable study for the young medical jurist than, pencil in hand, to note the changes introduced by Taylor into his various editions—the introduction of a word or the recasting of a sentence indicating increased caution in the statement of an opinion, the result of increased experience, and every page bearing witness to the painstaking care with which the work of revision had been undertaken. These qualities as an author could not fail to make Taylor an admirable witness—cool, collected, ready. His appearance at the trial of Palmer, beset as he was by a host of antagonists, was admirable; but his statement of evidence in the case of Thomas Drory has always appeared to us the best specimen of his forensic skill in grouping medical facts so as to lead but to one conclusion. The conviction in this case was mainly due to him, and he had the satisfaction in finding his account of the bearing of the appearances on the body of the deceased girl borne out to the minutest particular by the confession of the accused.

As a lecturer he was rather heavy. It was only in his latter years that we had an opportunity of hearing him, and that was the impression he made on us. His matter, however, was good, and it was so clearly arranged that students could easily carry it away with them in their notes.

Dr Taylor latterly had no rival. He reigned *facile princeps*, and it says much for him that for so many years he held undisputed eminence in one important department of medical science. This can be said of none of his confrères in medicine and surgery. The various text-books on these subjects live their day, and, if not forgotten, are never appealed to as authorities, and are rarely read by the practitioner and the student. There was a freshness in Taylor, and at the same time a *reliableness*, which made the perusal of his works a pleasure and not a toil. He has stamped his imprint indelibly on British medical jurisprudence, and has so embodied English judgment and caution that we can point with pride to his writings as we contrast them with those of Orfila and Caspar.

Dr Taylor died full of honour, trusted and respected by the public and by the two great professions of law and medicine, and, conscious of this, he had doubtless his reward. But it has always struck us as remarkable that, among the many titles bestowed on court physicians, none could be spared for so eminent a citizen who had done so much by his writings and substantial professional work to uphold the honour of his country.

PUBLICATIONS RECEIVED.

- Army Medical Department Report for 1878.
H. B. BAILDON, B.A.,—The Spirit of Nature. J. & A. Churchill, Lond., 1880.
G. M. BEARD, A.M., M.D.,—A Practical Treatise on Sea Sickness. E. B. Treat, New York, 1880.
R. H. BIGG,—The Orthopragms of the Spine. J. & A. Churchill, Lond., 1880.
Dr BOURNEVILLE,—L'Année Médicale, 1879. E. Plon et Cie., Paris, 1880.
Dr L. BOUVERET,—Des Sueurs morbides. J. B. Baillière et Fils, Paris, 1880.
G. H. BRANDT, M.D.,—Royat (les Bains) in Auvergne, its Mineral Waters and Climate. H. K. Lewis, Lond., 1880.
A. A. STRANGE BUTSON,—The Art of Washing. Griffith & Farran, Lond., 1880.
Dr BENJ. DESCHAMPS,—Des divers modes de terminaison des grossesses extra-Utérines. J. B. Baillière et Fils, Paris, 1880.
Sir JOSEPH FAYRER, K.C.S.I., etc.,—Preservation of Health in India. Kerby & Edean, Lond., 1880.
J. MILNER FOTHERGILL, M.D.,—The Practitioner's Handbook of Treatment. Macmillan & Co., Lond., 1880.
Dr V. HANOT,—Du traitement de la Pneumonie Aiguë. J. B. Baillière et Fils, Paris, 1880.
MORELL MACKENZIE, M.D.,—Manual of Diseases of the Throat and Nose. J. & A. Churchill, Lond., 1880.
Dr A. MOSSE,—Accidents de la Lithiase Biliaire. J. B. Baillière et Fils, Paris, 1880.
E. V. NEALE,—Associated Homes. Macmillan & Co., Lond., 1880.
JOHN PARKIN, M.D.,—Epidemiology. David Bogue, Lond., 1880.
H. S. PATERSON, M.D.,—The Human Body and its Functions. Hodder & Stoughton, Lond., 1880.
Dr J. REGIMBEAU,—Les Pneumonies chroniques. J. B. Baillière et Fils, Paris, 1880.
Dr P. REYNIER,—Recherches cliniques et expérimentales sur le bruit de Moulin. J. B. Baillière et Fils, Paris, 1880.
WM. ROBERTS, M.D., F.R.S.,—On the Digestive Ferments and the Preparation and Use of Artificially Digested Food. Smith, Elder, & Co., Lond., 1880.
Dr A. ROUX,—Des troubles oculaires dans les maladies de l'encéphale. J. B. Baillière et Fils, Paris, 1880.
Dr E. RONDOT,—Des gangrènes spontanées. J. B. Baillière et Fils, Paris, 1880.
Sir H. THOMPSON, F.R.C.S.,—Food and Feeding. Fred. Warne & Co., Lond.
E. WOAKES, M.D.,—Deafness, Giddiness, and Noises in the Head. H. K. Lewis, Lond., 1880.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Report of the Royal Maternity and Simpson Memorial Hospital for the Quarter from 1st February to 30th April 1880.*
By ANGUS MACDONALD, M.D., Physician to the Hospital.

AT the conclusion of the *trimester* ending on the 31st of January 1880 Dr Simpson was able to report the highly favourable result of an absence of mortality connected with the institution for the quarter. My three months have not been so fortunate, though there is still nothing very grievous to complain of, as we only lost one intern and one extern case. Another intern case, however, gave rise to extreme anxiety and concern.

The number of cases attended in all amounted to 159, of which 102 were extern, and 57 intern cases. Of the 102 extern cases, 17 were primiparæ, and 85 multiparæ. But of the 57 intern cases the relation was completely reversed, as they were composed of 31 primiparæ to 26 multiparæ.

The average age of the primiparæ in the extern cases was $21\frac{3}{4}$ years, in the intern cases $21\frac{5}{8}$ years. The average age of the multiparæ in the extern cases was $29\frac{1}{4}$ years; in the intern cases it was $27\frac{1}{2}$ years. It thus appears that the average ages of the primiparæ, both extern and intern, were nearly absolutely identical; but that those multiparæ who availed themselves of the advantages of hospital residence were on an average decidedly younger than those attended at their own homes. The explanation of this is evidently to be traced to the preference which women, who have the cares of a family devolving upon them, naturally entertain for being attended at home, where they can be with their children.

The average duration of the stages of labour in the intern cases was as follows:—

Primipara—1st stage, 30 hours 24 minutes; 2d stage, 1 hour 15 minutes; 3d stage, $12\frac{1}{2}$ minutes. Total average, 31 hours $51\frac{1}{2}$ minutes.

Multipara—1st stage, 16 hours 7 minutes; 2d stage, $56\frac{1}{2}$ minutes; 3d stage, 8 minutes. Total average, 17 hours $11\frac{1}{2}$ minutes.

These averages are certainly high for the first stage of labour; but they are occasioned by the occurrence of two or three cases where the first stage was very greatly prolonged whilst the waters remained unruptured.

We had not sufficiently reliable data to calculate the duration of labour in the extern cases.

There was a singular exemption from irregularities of presentation in our intern cases. All were vertex except one, which presented the face at the inlet, and which underwent in its passage through the pelvis the normal changes associated with the right mento-posterior variety of face case. This case required no interference. The pelvis was large and well formed. The great stretching of the perineum and vaginal outlet as the vertex passed over them was afterwards proved by a considerable amount of sloughing, although at the time of delivery there was no well-marked perineal tear produced.

The positions were also remarkably regular, being in those cases where there was opportunity to decide the position with certainty:—

	L.O.A.	R.O.P.	R.O.A.	L.O.P.	
Multiparæ,	22	0	1	0	= 23
Primiparæ,	24	0	0	0	= 24

and 1 face R.M.P.; giving the surprising result of only one right occipito-posterior position in 45 vertex cases. From one cause or other, the position was not noted in ten cases.

The sexes of the children were as follows:—Multiparæ, 15 female, 10 male = 25. Primiparæ, 11 female, 20 male = 31.

MORTALITY.

Extern Cases.—Of the 102 cases, one mother died; she was in an extremely debilitated condition from advanced phthisis, and during the labour had severe hæmorrhage. She died the same evening. This gives a maternal mortality of 1-100 cases. The number of children lost was seven in all, arising as follows:—One in a case of placenta prævia at 8th month, terminated by version. One a putrid birth at 7th month. One dead at 7th month—no apparent cause. One putrid and foot presentation. Three children were still-born, without ascertainable cause of death.

Intern Cases.—Amongst these there was one maternal death from septiciæmia. There were seven children still-born, and two died in hospital, giving an infantile mortality of nine. Amongst the foetal deaths before birth, one occurred in connexion with a prolonged labour due to small pelvis, which was terminated by long forceps; one occurred in connexion with a case of puerperal eclampsia; two occurred in connexion with a case of specific disease of the mother; one was due to miscarriage at the 6th month; one showed signs of maceration before birth. The cause of death in the other two cases could not be determined. Of the

two cases dying after birth, one was the victim of specific disease, and was also born prematurely, viz., at $7\frac{1}{2}$ months; one died of convulsions on the third day.

COMPLICATIONS.

A.—Amongst the 102 extern cases the following complications were met with:—1. A case of cross-birth, 8th month, terminated by turning. 2. A case of placenta prævia, 8th month, terminated by turning. 3. A case of twins, the one of which presented the breech, the other the vertex, in the left occipito-anterior position. Both did well. 4. One case of foot presentation. 5. A case of adherent placenta. 6. A case of persistent occipito-posterior position of the vertex in a primipara, which was terminated instrumentally. 7. A case of tedious labour from feeble pains and large size of the fetal head, terminated by long forceps. In the persistent occipito-posterior case, as the occiput was passing over and greatly distending the perineum, the uterus contracted suddenly and forcibly, expelling the fœtus and placenta together, and tearing the entire perineum and the sphincter ani. The laceration further passed up the recto-vaginal septum to the extent of from one and a half to two inches. About 8 hours after the accident the parts were carefully cleaned and the lacerated edges drawn together with silkworm gut, those of the recto-vaginal septum being sewed so as to allow the threads to be tied on the rectal aspect, and the perineal edges stitched in the usual manner. The wound healed throughout by first intention, complete power being restored to the sphincter ani and perineum.

I would here take the liberty of recommending silk-worm gut suture, as recommended by Dr Bantock, both in primary and secondary perineum operations. The saving of pain to the patient is very great indeed, and the silk-worm gut is equally as safe as the wire. I would also urge upon my confrères the propriety, in all cases of perineal rupture, however unpromising, of operating at once, as the results to the patient are certain to be very much better, and the operation is very much more easily effected. It does not matter, if it is otherwise inconvenient, whether the operation is immediate or 12 or 24 hours after the accident.

B.—Among the 57 intern cases:—

1. There was a case of prolonged labour in a primipara, whose pelvis measured between anterior superior spines of ilia, 9 inches; between iliac crests, $9\frac{1}{2}$ to 10 inches; external conjugate, $7\frac{1}{2}$ inches; in diagonal conjugate, $4\frac{1}{4}$ inches; leading us to calculate the internal conjugate at $3\frac{1}{4}$ to $3\frac{1}{2}$. The duration of labour in this case was—1st stage, 58 hours; 2d stage, $\frac{1}{2}$ hour; 3d stage, 3 minutes; total, 58 hours 33 minutes. In the first instance Tarnier's forceps were tried with the view of effecting delivery; but as the cervix was only partially dilated, it was found impracticable to introduce the second blade without risk of

injuring the cervix, as the blades of Tarnier's instrument are so bulky. The ordinary Simpson's long forceps were then tried. They passed through the cervix with ease; and by exertion of a considerable amount of tractile force, delivery was ultimately effected.

2. A case of prolonged labour in a primipara, who had an antero-posterior curvature of the lumbar vertebrae, and whose pelvic measurements were as follows:—Between anterior superior spines of ilia, $9\frac{1}{8}$ inches; between crests of ilia, $10\frac{1}{8}$ inches; external conjugate, $7\frac{1}{8}$ inches; measurement of the diagonal conjugate lost. Duration of labour—1st stage, 118 hours; 2d stage, 15 minutes; 3d stage, 10 minutes; total, 118 hours 25 minutes. This patient was chloroformed, and Tarnier's forceps applied with ease. They were found to work well, the only objection to the instrument being that the joints between the perineal lever and the fenestra exhibited a tendency to catch and cut the mucous membrane of the vagina as the head passed down.

3. Face presentation in a primipara, aged 16. In this case the measurements were—Distance between ant. sup. iliac spines, 9 inches; distance between iliac crests, 10 inches; external conjugate, 7 inches; diagonal conjugate, $5\frac{1}{4}$ inches. Duration of labour—1st stage, 24 hours; 2d stage, $2\frac{1}{2}$ hours; 3d stage, 0; total, $26\frac{1}{2}$ hours. The face presented the brow to the left foramen ovale, the chin to the right sacro-iliac synchondrosis. As the second stage advanced the chin descended; ultimately the long rotation forwards took place, the chin became fixed under the pubic arch, and the forehead, vertex, and occiput successively swept over the perineum. Chloroform, hot-water sponge, and vaseline ointment were used to facilitate safe dilatation of the perineum. This body was preserved nearly intact, but so great was the stretching that subsequent sloughing of the vaginal outlet and of the anterior part of the perineum took place. Measurements of fetal head in this case were as follows:—Occipito-frontal diameter, $5\frac{1}{4}$ inches; biparietal, 4 inches; occipito-mental, $5\frac{1}{2}$ inches; bitemporal, $3\frac{1}{2}$ inches; suboccipito-bregmatic, $3\frac{1}{2}$ inches. Circumferences—occipito-frontal, $15\frac{1}{4}$ inches; occipito-mental, $15\frac{3}{4}$ inches. It will thus be seen that, besides the difficulties arising from an unfavourable presentation, we had to contend in this case with a decidedly large head.

4. *Septicæmia*.—Of this serious disease two cases occurred. The first was that of a delicate, nervous girl, who was seized with severe hæmorrhage on the 9th day after delivery. She was up and doing well on the preceding day. The cause of the hæmorrhage was a small piece of retained clot, which was removed, after which there was no further bleeding. The temperature, however, speedily rose, and after struggling hard with the disease the patient succumbed on the 20th day after delivery. The second case was that of a strong woman who had given birth to a prema-

ture child. The patient was probably the subject of specific disease. On the 3d day the lochia became very putrid. The patient was put under the influence of chloroform, and after introduction of the hand into the vagina and two fingers into the uterus several small shreds of stinking membrane, and also a small portion of placental tissue, were removed. The uterus was subsequently washed out with strong solution of carbolic acid. The following day symptoms of septic infection were developed, but eventually the case terminated in recovery, the patient being discharged well on the 25th day. These cases present several points of great interest; but as it would be foreign to the nature of a report to go into them at length here, I reserve their consideration for a separate paper.

5. *Eclampsia*.—A case was admitted in a comatose condition. She had previously been seen by Dr Fraser, Abbeyhill, and myself. We had found her urine loaded with albumen, and had bled her to the amount of $\frac{3}{4}$ xij. before her admission to the hospital. Chloral and bromide of potassium in sustained doses had also been administered. Previous to admission the patient had eighteen fits, but in the Maternity she had only two convulsions. Chloral was continued, with counter-irritation in the form of dry cupping over the region of the kidneys. Fomentations, also, of concentrated infusion of digitalis were applied over the loins, along with diuretic medicines by the mouth. As the os was only dilated to about the size of a sixpence and there were no pains, no measures were taken to expedite delivery. On the second day the patient became nearly quite conscious, only very irritable; the secretion of urine was copious, and the amount of albumen contained very slight. On the morning of the third day, whilst walking about the ward, a severe pain came on, expelling the fetus. The patient was then at the conclusion of the eighth month of pregnancy. The child had been dead for some days, as maceration of its tissues was commencing. In the afternoon of the same day the urine had only the faintest trace of albumen, and the mother was dismissed well on the fifteenth day after admission. The detailed account of this case is reserved till another opportunity.

Perineal Injuries.—Our observations on perineal injuries among intern cases gave the following results:—In 14 of the 31 primiparae the perineal body was more or less lacerated, in 6 of them severely. This gives a proportion for the primiparae of forty-five per cent. In these we do include lacerations of the vaginal outlet or lesions of the fourchette only. In the 26 multiparae 4 distinct lacerations of the perineum occurred. In one of these the tear went back an inch, and required to be stitched. In all cases of considerable laceration we sewed the parts together at once with silk-worm gut. These all united satisfactorily except one case, in which union failed completely.

Extern Cases.—In only one case was a severe tear reported to

me. That was in connexion with a persistent occipito-posterior case terminated by forceps, and has been already incidentally referred to. In only one of the two extern forceps cases was the perineum torn, so that the lesions cannot be ascribed to interference with the normal mechanism.

Extra-peritoneal Hæmatocele.—In one case, a primipara, a hæmatocele formed on the left and posterior aspects of the lower third of the vagina. The cavity became putrid, and its contents worked their way into the vagina by perforating its wall at two places. This process was accompanied by considerable fever, which, however, immediately subsided so soon as the cavity was completely emptied and washed out with a disinfectant solution.

High Temperatures.—Excluding the two cases of septicæmia, evening temperatures, varying from 103° to 106° for periods varying from three to eighteen days, were observed in 15 cases. In three of these cases there was present extensive parametric inflammation, which would explain the high temperature, whilst the suppuration of the small hæmatocele accounted for a fourth one. In another there was suppuration of the breasts. In four cases the cause of the high temperature seemed most probably due to the healing of ruptured perinæa. In one case the explanation was clearly due to a slight degree of metritis. In the others it was impossible to account for the fever. There was not observed, in any of the cases, a regular rise on the supervention of the milk secretion warranting the belief that such temperatures can be explained as milk fever.

Before closing this report I would wish to express my obligations and thanks to Dr Helme, one of the resident medical officers in the Hospital during the period embraced in the paper, for valuable assistance in drawing it up.

ARTICLE II.—*On Sacro-Pubic Hernia, otherwise known as Pro-lapsus Uteri.* By DAVID BERRY HART, M.B., Assistant to the Professor of Midwifery in the University of Edinburgh, Secretary to the Obstetrical Society, Edinburgh.

(Read before the Obstetrical Society of Edinburgh on 9th June 1880.)

IN the formation of the female pelvic floor a structural problem had to be solved, as follows:—The floor had to be constructed so that we should have some method by which it could be opened up to admit of the passage of the child's head; and while this was to be arranged in such a way as not to impede parturition unduly, the pelvic floor was not to be impaired in its structural efficiency, and was to remain sufficiently firm to resist ordinary, and a certain amount of extraordinary, intra-abdominal pressure.

In the erect posture the female vertebral column may be

regarded as practically vertical. At the fifth lumbar vertebra the arrangement alters, and the first two bones of the sacrum make an angle backwards with the vertical of about 60° . The other vertebrae (3-5 sacral and 1-3 coccygeal) curve gradually forwards, so that the whole sacrum and coccyx form a surface concave forwards. The further continuation of this bony curve is fleshy, reaching to about $1\frac{1}{4}$ inches from the symphysis pubis, forms what I have already termed the sacral segment¹ of the pelvic floor (Fig. 1), and makes an angle of about 60° with the horizon. The space between the posterior aspect of the symphysis and the posterior vaginal wall is filled up by the pubic segment of the pelvic floor (Fig. 3), whose vaginal aspect closely fits on the anterior aspect of the sacral segment, and is continuous and blended with it on either side of the vaginal slit. Anteriorly the pubic segment has a loose attachment to the symphysis (c, Fig. 3); while posteriorly, where it does not blend with the sacral segment as above given, it is attached to it indirectly through the uterus by the posterior vaginal wall (Fig. 2). This forms a strap-like attachment, and is only firmly blended to the sacral segment at the perineum. The peritoneum passes from uterus to sacral segment. Had the sacral segment been prolonged close to the symphysis pubis, it is evident that women would never have had prolapsus uteri; but then parturition, as we know it at present, would have been an impossibility. The pelvic floor is really built so as to support the superincumbent viscera well, and yet not so strongly as to unduly impede the birth of the head. The happy medium of strength sufficient but not too great has been struck.

Anatomically considered, then, the part of the pelvic floor weak in structure and attachments is the pubic segment, specially in the middle line, and the posterior vaginal wall. So far as displacement of the pelvic floor is concerned, then, we have only to consider the action of the intra-abdominal pressure on this part. There is never any prolapsus of the sacral segment. Rectocele is a distention, and not a hernial phenomenon.

I have spoken of the whole sacral segment as being the supporting one. Usually, however, the perineum is regarded as performing this function. Opinions as to the value of the perineal body vary from strong statements that it has nothing to do with prolapsus uteri to equally strong assertions that its existence is the only safeguard against it.

The inferior angle or free edge of the sacral segment is that part of it which is most liable to injury during parturition, since it is the thinnest, and is unsupported by any bony structure (see Figs. 1 and 2). It is, therefore, strengthened here by a pyramidal wedge of elastic and muscular tissue known as the perineal body. On vertical

¹ *Edinburgh Medical Journal*, April 1879.

section this body is found to be $1\frac{1}{4}$ inches¹ in height, and to touch with its apex a line joining the bottom of the symphysis pubis and sacro-coccygeal joint. The apex of the perineal body is distant about 2 inches from the top of the posterior vaginal wall. I have been thus particular in defining it, since Thomas of New York, in a recent able paper, has unwarrantably exaggerated its dimensions² (see Fig. 4). The perineal body, therefore, tips and strengthens the inferior angle of the sacral segment like the brass-bound edge of the door-step exposed to much traffic, and acts as a strong attachment to the important perineal muscles. It is erroneous, however, to draw it, as Thomas has done in figure 2, with twice the height and one and a half times the breadth of the reality. This gives it the importance of the sacral segment itself—an importance not warranted by fact.

The intra-abdominal pressure acts on the pelvic floor as follows:—We must regard the viscera from the thoracic to pelvic diaphragm as so much weight of fluid. Atmospheric pressure does not come into consideration, because the atmospheric pressure on the anterior abdominal wall transmitted to the peritoneal surface of the pelvic diaphragm is counteracted by that on the external aspect of the pelvic floor. If we consider the viscera as acting like a fluid, their pressure is at right angles to the limiting surface, *i.e.*, the peritoneal aspect of the pelvic floor. A consideration of Fig. 3 will show, then, that part of the intra-abdominal pressure will press the pubic segment of the pelvic floor against the sacral (lines 10–14, counting from the symphysis). Another part will have a resultant pressing it in the same way, but also tending to force it down out at the vaginal orifice (lines 8 and 9). A third portion will press it against the symphysis pubis (1, 2, 3), and other moieties will tend to drive it out of the vaginal orifice (6 and 7). As a whole, then, the intra-abdominal pressure will tend to press the pubic segment against the supporting sacral segment and symphysis. The resultants tending to force the pelvic segment past the sacral will be counteracted so far by the want of rigidity of the pubic segment, by the cohesion of the vaginal walls, and the lateral bony attachments of the pubic segment. The pelvic floor, however, as already said, is not thoroughly strong. Its weak portion is all that in front of the anterior rectal wall. Any long-continued strong intra-abdominal pressure will therefore tend to displace it, and displace as a whole a definite portion of it, *viz.*, the pubic segment, the uterus, and the posterior vaginal wall. The pubic segment has a weak attachment anteriorly, and its connexion to the sacral segment through the posterior vaginal wall is also weak. The uterus lies between, and therefore extra intra-abdominal pressure pushes all three—*i.e.*, pubic segment, uterus,

¹ This I found as its average height in six vertical sections.

² *American Journal of Obstetrics*, April 1880, p. 312.

PROLAPSUS UTERI.



FIG. 1.—The sacral or supporting segment (*fg*) of the pelvic floor and posterior vaginal wall in sagittal mesial section. The pubic or displaceable segment, uterus and posterior vaginal wall, have been removed. *e*, Symphysis pubis; *f*, Perineal body; *g*, Anus.—(From nature.)



FIG. 2.—Sagittal mesial section of female pelvic floor, showing perineal body "considerably exaggerated."—(Thomas.)

PROLAPSUS UTERI.

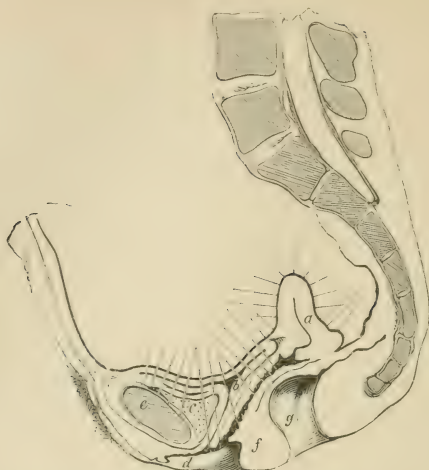


FIG. 2.—Sagittal mesial section of female pelvic floor, showing effect of intra-abdominal pressure on it. *b c*, Pubic or displaceable segment.—(From nature.)

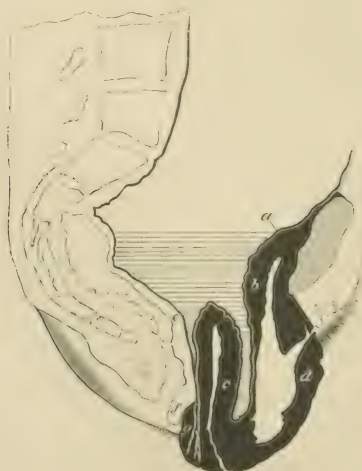


FIG. 4.—Diagram modified from Schütz, showing the hernial nature of prolapsus uteri. The coverings of the hernia are in black; the transverse lines indicate viscera. *a*, Peritoneal line, *i.e.*, sac; *b d*, Pubic segment; *c*, Uterus; *f*, Remains of perineal body; *g*, Posterior vaginal wall; *e*, Anterior or rectal wall.

and posterior vaginal wall—down *en masse*. Anatomically considered, then, all in front of the recto-vaginal line is what intra-abdominal pressure can displace.

The sacral segment is therefore the supporting one, and the pubic segment the displaceable one. It is almost always stated that the posterior vaginal wall is the supporter, and its special sigmoid curve is believed by Thomas to have a special mechanical value in preventing prolapsus. Thomas's mechanical principle is accurate enough, but the fallacy in its application is that he considers intra-abdominal pressure as applied to the top of the vaginal wall. If one wishes to consider the effect of intra-abdominal pressure on the posterior vaginal wall, one must consider the viscera and pubic segment as pressing like a fluid on the whole posterior vaginal wall and at right angles to it.

To regard the perineum and the posterior vaginal wall as the supporting part is wrong. The perineum is only a certain fraction of the sacral segment, made of a stronger tissue, to be sure, but yet having a value only in proportion to its size and the fact that it gives insertion to many muscles, and is the only bit of the sacral segment which can be torn by the fetal head.

We have thus considered the natural structural arrangements of the pelvic floor. This leads us, then, to its pathological displacements, viz.:—

HERNIA through the Front Half of the Pelvic Floor.—Sacro-Pubic Hernia, otherwise known as Prolapsus Uteri.

Hardly any subject in Gynecology has given rise to more discrepancy of opinion than the pathological condition known as prolapsus uteri. Examination of the opinions advanced by Huguier, Matthews Duncan, Goodell, Marion Sims, Thomas, Protheroe Smith, and many others, will show how widely their views diverge. By some, lesion of the perineum is believed to cause no predisposition to its occurrence, while others seem to imagine that its integrity is the only safeguard against it. It is interesting to note that so many acute observers should hold such divergent opinions. Some of the reasons for this, however, are well worthy of our preliminary attention.

In the first place, the stability and structural arrangements of the female pelvic floor have been ignored.

In the second place, the importance of the intra-abdominal pressure has been much underrated. The gynecologist, looking at the stages of a prolapsus uteri occurring in a living woman, is apt to think that the anterior vaginal wall is pulling down the uterus, and the uterus pulling down the posterior vaginal wall, ignoring the reality of the mass of viscera and muscular force above pushing these down as a whole. The uterus is only an insignificant fraction of this mass, and its supra-vaginal cervical portion still more so. The sphere of prolapsus uteri is not in the pelvic floor alone, but reaches up to the diaphragm.

In the third place, the term "prolapsus uteri" is a most unfortunate and misleading one. It has led most gynecologists either to accept without question or to attempt to prove the supposition that the uterus has some important part in causing its own prolapsus; whereas, as I hope to show, it really plays no part in it at all. Had surgeons termed "inguinal hernia" "prolapse of the cremasteric fascia," it is evident they would have been led as far astray as gynecologists.

Fourthly, it has been chiefly studied clinically.

Prolapsus uteri, however, must not only be studied clinically, but also in vertical section on the actual cadaver, as it is only by combining what we learn from these and what we know of the structural arrangement of the pelvic floor that we can obtain true views as to its nature.

We therefore now take up—

A. Clinical Features of Prolapsus Uteri.

B. Anatomical Nature.

C. Explanation of (1) Definite Mechanism; (2) Varying Position of Uterus during Descent of a Prolapsus Uteri; (3) Enlargement of Uterus.

D. Nature of Prolapsus Uteri.

E. Factors producing Prolapsus Uteri.

F. Nomenclature.

A.—*Clinical Features of Prolapsus Uteri.*—If a patient with a complete prolapsus uteri be laid on her side, the whole prolapsed organs replaced,¹ and if she be then bid strain, the following structures will appear and pass out at the vaginal orifice:—The anterior vaginal wall first appears from below upwards. *Pari passu* with its descent the uterus and posterior vaginal wall have come down, the cervix tracing the pelvic curve, and the uterus becoming more and more retroverted, until when the *os uteri* is at the vaginal orifice the uterus lies in the vaginal axis, with the posterior vaginal wall forming a pouch, the half of its own length behind it. Further efforts by the woman will now drive the uterus outside the orifice, and the posterior vaginal wall is now completely everted, its lowest part appearing last.

B.—The anatomical features can be studied only in vertical section. Schütz's vertical section of the parts in complete prolapse, from a frozen section, illustrates the description we have given admirably. Figure 4, which is modified from Schütz's drawing, shows that in a nearly complete prolapsus we have from before backwards, pubic segment of the pelvic floor, uterus, and posterior vaginal wall. The rectum is quite in position, and the part of the posterior vaginal wall not prolapsed is

¹ This should be done so that what comes down first is replaced first. The order of replacement is therefore posterior vaginal wall, uterus, and anterior vaginal wall.

that part of it opposite the perineal body where the loose connexion between posterior vaginal wall and anterior rectal wall ceases. The peritoneal lining of the displaced structures is well seen.

C.—From all we have now gone over it is evident that so-called prolapsus uteri is, as we anticipated anatomically, a displacement downwards *en masse* of all the structures in front of a line drawn between the posterior vaginal wall and anterior rectal one; and if this be considered it will readily be seen why we have always a definite mechanism when viewed at the vaginal orifice.

Two points now come up for consideration, viz., the position of the uterus during the descent of a prolapsus uteri and the relation of the enlargement of the uterus to prolapsus uteri. In regard to the first point, it will be seen that the uterus, while it is being forced down, has the position of its long axis continually altering. This is often expressed by saying that the uterus becomes more and more retroverted as it is forced down. The real fact is, that as the pubic segment is forced down it is stretched chiefly on its peritoneal aspect. In this way tension is made on the cervix uteri, with the effect of throwing the fundus back and making it rest on the retrojacent structures. As these have roughly the pelvic curve, we get the uterus in this way constantly altering its axis-lie.

It is a fact, clinically, that in most cases the uterus in prolapsus is enlarged. At present I am only considering prolapsus uteri in a mechanical aspect; whereas the question of this enlargement is to be settled clinically and by anatomical sections. My own belief is that the enlargement is not purely cervical, but affects the whole uterus and pubic segment too, and that it is a consequence of prolapsus uteri, and not a factor in its production. If we view a prolapsed uterus with the os at the ostium vaginæ through the pelvic brim, it can be seen that it lies, as it were, at the bottom of a valley, the sides of the valley being the broad ligaments, the bed of the valley the uterus. The parts of the uterus do not lie on the same horizontal plane, but the cervix lies lower. It is evident, then, that the venous supply of the uterus, having a mechanical disadvantage to its return, will have a tendency to stasis most marked at its cervical end. This may lead to areolar hyperplasia at first, and, so far as our present knowledge goes, accounts for the increased size of the uterus in a prolapsus.

D.—*Nature of Prolapsus Uteri.*—The uterus has nothing to do with prolapsus uteri. It is a time-honoured term, but a misleading one. Prolapsus uteri is really a hernia, and is analogous in every point to what we term a surgical hernia, such as femoral hernia, and so on.¹

¹ I should state that Dr Protheroe Smith and Dr Matthews Duncan urge the hernial nature of prolapsus uteri.

Thus it has (1) a *sac*, the peritoneum; (2) a definite road to travel along, whose boundaries are—*a*, in front, the pubic symphysis; *b*, behind, the sacral segment of the pelvic floor—*i.e.*, from anterior wall of rectum back to sacrum; *c*, side walls; (3) definite coverings, *viz.*—*a*, pubic segment of pelvic floor; *b*, the uterus; *c*, posterior vaginal wall. Like all herniæ, its sac contains intestine (see Fig. 4).

What I have already given is sufficient evidence as to the hernial nature of prolapsus uteri. The matter will be made more evident by a consideration of an ordinary oblique inguinal hernia. Here the same structural problem had to be solved, *viz.*, how to get the fetal testicle from the abdominal cavity into the scrotum without unduly impairing the strength of the abdominal wall. Hence we get the spermatic cord lying in an oblique slit, so made that the intra-abdominal pressure presses at right angles to it, *i.e.*, in such a way that the boundaries of the inguinal canal behind the cord are pressed against those in front of it. Still this is the weak point in the wall, and the point where hernia generally occurs. In any such hernia the coverings are thickened, yet no surgeon regards this otherwise than as a result of the hernia itself, caused by excessive intra-abdominal pressure on a part anatomically weaker. The same view holds good for a prolapsus uteri. It is a hernia too, and the uterus is only a thickened covering.

If this view be correct, it is clear, then, that the theory of prolapsus uteri, which makes its initial cause lie in the supra-vaginal elongation of the cervix, is open to the objection that it would be the only case of a hernia known where a thickening and hypertrophy of a covering caused the hernia itself. It is unintelligible, too, in other respects, and leads to wrong treatment.

E.—The factors producing prolapsus uteri are three in number, *viz.*—1. Deficient sacral support; 2. Deficient tone of pubic segment of pelvic floor; 3. Intra-abdominal pressure.

1. *Deficient Sacral Support.*—By this I mean that through parturition the sacral segment has got straightened out and notched or deficient at its lower margin—the perineum. It is wrong to imagine that tear of the perineum is everything in prolapsus uteri. The perineum may be considerably torn, but if the sacral segment is still sufficiently curved, and the intra-abdominal pressure not so great, there will be no prolapsus. Tear of the perineum is not everything in prolapsus uteri; but it is too great a rebound from this view to say that it never has anything to do in bringing it about. Deficient sacral support makes the task of intra-abdominal pressure easier. The bearing of the second and third factors is sufficiently evident. Of all the three, the third, *viz.*, increased intra-abdominal pressure, is the most important, and is sufficient to cause prolapsus even in virgins. The first and second are adjuvant, and almost constantly present.

The etiology of prolapsus may thus be summed up:—1. Intra-

abdominal pressure alone may cause it; 2. An inspection of the figures already given will show that deficiency of the perineum and straightening of the sacral segment will form important factors in prolapsus uteri—*i.e.*, they cannot resist intra-abdominal pressure sufficiently. Want of tone of the pubic segment will make it more easily driven down.

The nomenclature in prolapsus uteri is very embarrassing and deceptive. All such terms as "cystocele," "prolapse of anterior vaginal wall," etc., should be avoided. The term sacro-pubic hernia I have proposed, though scientifically correct, will not displace the classical one of prolapsus uteri. The gradations of prolapse are best named by describing how much of the anterior vaginal wall, uterus, or posterior vaginal wall is seen at the vulvar orifice.

ARTICLE III.—*Upon the Causes, Prevention, and Treatment of Afterpains.* By JOHN E. RANKING, M.D., M.A. Oxon.

(Continued from page 49.)

SECTION IV.—At this stage the consideration of the nature and causes of afterpains easily presents itself. Universal consent has excluded from under this head all those pains which accompany or are symptomatic of the puerperal diseases.

Although most authors acknowledge this division to be perfectly arbitrary, and state that afterpains, if long continuous, may run on into serious inflammatory disorders, it is somewhat remarkable that, with very few exceptions, no attempt has been made to classify them with any reference to their real or supposed origin. In too many instances the subject is briefly dismissed thus:—"Unless severe, they require no treatment, but are rather salutary." Any attempt at classification of these phenomena, however incomplete, cannot fail to show that, salutary as is the process of uterine contraction which their occurrence in certain instances implies, still the element of pain is never, strictly speaking, natural, though too often beyond our power to prevent. A very interesting but inexplicable fact is, that it is impossible to predicate afterpains in any labour, however severely they may have occurred formerly. Afterpains may be classified as follows:—1. Connected immediately with the uterus—uterine—subdivided according to cause: *a.* Expulsive; *b.* Spasmodic; *c.* Neuralgic; *d.* Rheumatic. 2. Connected with utero-ovarian nerves. 3. Reflected pains in cerebro-spinal nerves. 4. Pains in neighbouring organs: *a.* Intestines; *b.* Rectum; *c.* Bladder.

1. *Uterine Afterpains*.—*a.* Expulsive.—These painful sensations which fall under this head are merely a reproduction of the throes of labour, and, like them, are actual contractions of the whole uterus excited by the stimulus of a substance within the uterine cavity.

which the organ seeks to expel. This cause is so far the most frequent origin of pain after delivery that many authors mention no other cause, describing afterpains as invariably the expression of a uterus which has something to get rid of, and therefore eminently salutary, as showing that the uterus is not only alive to the existence of the foreign body, but is determined to be quit of it. Other authorities, however, refuse to allow that the term "afterpains" is applicable to this condition—doubtless holding that as, except in rare instances, the presence of a coagulum in the uterine cavity is easily avoided, the pains are no more to be considered as an ordinary sequel to labour than is post-partum hæmorrhage, seeing that both depend upon the same initial condition—inefficient contraction. Hæmorrhage after separation of the placenta is prevented in two ways—(a) *Contraction*, which, by approximating the walls of the vessels, hinders the immediate escape of blood, and affords time for the second and more enduring factor, (b) *thrombosis*, to come into operation. Any condition, which disturbs either of these factors, or alters their relation to one another, allows of the escape of blood more or less freely. Thus—(1.) Initial contraction may be absent or too short; (2.) The blood may be deficient in coagulating power; (3.) Although initial contraction is sufficient for ordinary cases, vascular tension being very high, the thrombi become detached as the first energy of the contraction diminishes.

In examining these conditions and the various modes in which they may arise, we may discard the second as foreign to our present purpose, the state indicated being invariably attended by post-partum hæmorrhage of the most terrible description. Nos. 1 and 3 demand closer attention, as a due appreciation of the several causes upon which they may depend furnishes us with the readiest means of prevention.

(1.) *Initial Contraction absent or too short*.—May be due (i.) to an inherent defect in the uterine structure itself; (ii.) To uterine exhaustion.

(i.) Putting aside the question of the effect of actual disease upon the uterine muscle, it has long been observed that its capacity for sustained effort in no way depends necessarily upon the general physical condition of the patient. Experience tends rather to the belief that labour is a longer process in the plethoric and corpulent than in more delicately constituted women. It is hardly open to question that in large-framed, flabby women uterine action is more tardy, feeble, and less efficient; whilst it is an undoubted fact that they are especially prone to powerless labour and post-partum hæmorrhage, and that it is just in such cases that afterpains are liable to be most troublesome, and the coagula upon which they almost invariably depend, at any rate in the first instance, are largest. Another, and it would seem most potent cause of diminution in the capacity for sustained effort, is too rapid succession of

pregnancies. That this is no chimera, but only an example of the natural law according to which all forces tend to degenerate if their proper relation of activity and repose be disturbed, would seem to be most aptly evidenced by the following consideration:—*In primiparæ* coagula never form in the uterus after delivery; or at least so rarely, that all authors who attribute afterpains to their presence agree in the dictum that afterpains in primiparæ are unknown. However, if the labour has been very rapid, or if it be not the result of a first impregnation, coagula may form. *In pluriparæ*, as has been said, coagula are the commonest of all causes of pain after delivery; and furthermore, their number and size increase, *ceteris paribus*, in proportion to the frequency of the successive impregnations. When, however, a considerable time has elapsed between two impregnations, we again find absence of coagulation in the uterine cavity, and *pro tanto* absence of afterpains, even when formerly they have been most distressing. I am unable to speak positively as to the shortest time which must elapse before we can look for this result, as only a deduction from a very large number of instances would be entirely free from fallacy; but, as far as it is possible to judge from a small number of cases taken at random, I think two years is quite the shortest interval which must exist between two successive impregnations.

(ii.) *Uterine Exhaustion*.—It is unnecessary to do more than direct attention to the various ways in which this condition is brought about, and the effect of each upon the especial question before us. Uterine exhaustion may be due to—1. The length of time which the organ has been at work, as in a tedious labour: 2. The effect of very rapidly recurring efforts, as in precipitate labour, or when the second and third stages have been unduly rapid; 3. Very frequent though inefficient contractions, which not only exhaust the organ, but the patient; 4. Over-distention. The influence of these conditions in causing the kind of afterpains under consideration is by no means equal; the first being rarely, the others invariably, followed by intrauterine coagula and pains. Nor is the reason far to seek. The uterine exhaustion following rapid labour is greater in proportion as the proper period of rest has been encroached upon, and as in the case of the rapidly-acting heart-muscle its weariness is due not so much to the work it has done as to the loss of rest which it has sustained. To arouse its flagging energy the stimulus must be stronger, but the cavity being emptied, and excito-motor arcs at rest, the stimulus is lessened, the short effort has left the force of the general system unimpaired, the arterial tension is still high, and the blood escapes only too readily through the unguarded vessels. In the former case the contractions have indeed been far more numerous, but with distinct periods of rest, and the organ sustains its final contraction longer than after rapid labour. At the same time the general power has been tried to the uttermost, the heart's action has become enfeebled, and the force of

the uterine contraction, small though it be, suffices to block the way against the languid circulation.

The next class of cases is made up of those instances where the initial contraction would be sufficient to ensure against intrauterine coagula under ordinary circumstances, but, vascular tension being very high, the thrombi become detached as the first energy of the contraction diminishes. The cases may be divided into two groups—(1.) In which the vascular tension is already very excessive—unavoidable. (2.) In which the high tension is due to accidental causes—avoidable.

(1.) The elaborate investigations of Dr Mahomed upon the subject of arterial tension cannot fail to produce the impression that all the possible relations in which this condition may stand to the human economy are as yet very imperfectly recognised. He has shown that even in persons who present no appreciable deviation from health the sphygmograph shows the intravascular pressure to be excessive. It is in these cases that the increased tension which obtains normally during pregnancy reaches its highest point. Delivery in them is invariably attended or followed by a free escape of blood, by which means nature seeks to restore the balance of the circulation and reduce the bulk of the circulating fluid, which would, if retained, tend only to permanent damage to the vessels and heart, and secondarily to all the tissues of the body. In these patients the impact of the blood upon the newly-formed thrombi in the uterine vessels is such that, as the energy of the initial contraction wanes, the thrombi, missing the support of the opposing uterine surfaces, are swept out, or at least so far loosened by the force of the current as to allow of bleeding into the cavity of the uterus.

The extent to which coagula may form in the cavity would seem to depend upon (a) the rapidity of the flow; (b) the degree of contraction of the cervical fibres; (c) the excitability of the uterus. It is, of course, evident that if the flow be rapid and the uterus very slow to respond to the stimulus, fatal hæmorrhage may result. If the flow be tardy, and the excitability of the uterus feeble, enormous coagula may form before the uterus is roused to action. If the flow be rapid, and the uterus easily roused, several coagula may form and be expelled in succession. In the former case, pain is usually troublesome and the uterus large for a day or two before expulsion takes place, and then no more coagula form. But this condition, which is dependent upon causes quite beyond our control, has therefore less interest than that which we must next consider, as by due care dislodgment of the thrombi may be readily avoided. In these cases the blood-pressure may even be very low, or, at any rate, not greater than may be easily counteracted by the thrombi alone; but in consequence either of great emotion, or improper exertion, or undue stimulation, the intravascular pressure is suddenly increased, the thrombi are detached, and bleeding takes place. In these cases there are usually not more than one or two clots ex-

pelled; but the needless waste of blood, the extra work thrust upon the uterus, and the loss of rest to the patient, generally give rise to one or other of those forms of afterpains which we shall proceed to discuss. Chloroform, if given in excess, may induce these afterpains.

Spasmodic Afterpains.—In point of frequency these occupy the next place. Indeed, from one point of view they might be regarded as the commonest form of distress; for pains of this character occur not only in pluriparae, but, under certain circumstances, in primiparae also. These, beside being perhaps the most distressing, are also the most interesting of all the various kinds of afterpains. They are, in fact, nothing more than the rhythmical contractions of the uterus, which may be observed during pregnancy as well as after delivery, and which occur not only in response to reflex influences conveyed through various channels, but also as spontaneous manifestations of functional activity in the organ. The chief interest lies in the fact that these contractions should give rise to painful sensations.

It is well known that uterine contraction is by no means *per se* necessarily painful; nay, rather it would appear that this element of pain is naturally as entirely foreign to contraction of the uterine muscles as to muscular contraction in the intestines, bladder, and elsewhere. Thus animals in the wild state suffer no pain from the throes of labour; and it is only observed to a very feeble degree in those which are domesticated, unless an accident or some disease renders a greater energy of action necessary on the part of the organ. Cazeaux, reviewing these facts, writes, "If, therefore, the contraction is only painful as it were accidentally in animals, and merely in consequence of a particular morbid condition of the uterine fibre, are we not justified in referring the pain in the human species to the same cause?" Whether we attribute the painful sensations to pressure on the nerve-fibrils or to electric discharge in the muscle-fibres, we do not thereby explain the fact of the sensation being painful in this particular instance.

It is hard not to assent to this proposition in the face of the facts which meet us in the case of the human female. Thus Clarke, and, later, McClintock and Hardy, pointed out the greater tendency to afterpains manifested by women whose menstrual epoch is attended by pain. Again, how greatly do women vary in the degree of tolerance of labour pains. The strongest proof, however, is to be drawn from a comparison of the effect of civilisation upon the human female in this respect. The North American Indian is no sooner delivered than she goes with her child to the nearest river and bathes. The Gipsy by the roadside within a few hours resumes her "tramp" with the rest of the "tribe." In many purely agricultural districts women are at field work within three or four days. In these instances not only must labour be incomparably easier, but the subsequent contractions of the uterus, if not

actually painless, cannot be attended by the distress so frequently seen, both in town and country, among less robust patients. Barnes writes, "Extreme susceptibility to pain is one of the penalties of high civilisation and of too luxurious rearing." Increased uterine sensibility is in many cases due to turbulent movements of the fœtus, to the effects of long-continued straining from violent and persistent vomiting during pregnancy, or to repeated contractions in long, difficult labours. Patients who experience this form of pain present certain features in common, which may perhaps best be grouped under the head "neurasthenia"—the result of enervating influences, hygienic and moral, varying according to the social status of the individual, and manifested now by psychical, now by sensory, rarely by motor phenomena. These persons have usually a delicate appearance. They readily tire, and experience a sense of weariness almost amounting to pain after any unusual exertion. The catamenial period is usually attended, if not by local pain, by increased tendency to neuralgia in various parts of the body, and frequently by the condition of irritability graphically characterized by Marshall Hall as "a pain in the temper." After delivery in these cases there will generally be complaints of universal pain, more or less felt also in the uterus, and recurring at intervals. This may either occur from the first, or may begin three or four days after delivery, and may be excited by reflex stimulation when the child sucks, especially if the nipples are sore or cracked, or may occur spontaneously. The uterus is found well contracted, more or less tender; the lochia may be free and bright or scanty and pale; coagula are rarely passed, are small, usually black, and are never extruded with a "pain" (unless large enough to distend the vagina), but usually pass whilst the patient is micturating. When the lochia are scanty, and allow of clotting in the vagina, spasmodic pain is often excited; and in some very sensitive patients it would seem as though the very presence of the fluid lochia and epithelial debris in the uterine cavity sufficed to excite spasmodic efforts. So constant is uterine tenderness in these cases, that it is hardly too much to say that, if the uterus is not tender, pain will be entirely absent, *unless the nipples become sore and tender or the patient debilitated*. Unlike expulsive pains, spasmodic pains are more likely to occur after a long labour, and after "front pains," more especially if the patient has been unable to sleep and take nourishment. That McClintock's explanation of the uterine tenderness is not constantly true is shown by the fact that, in many cases, the uterus may be felt to contract, its force be shown by a sudden gush of discharge, but yet the patient will be quite unconscious of the contraction.

Neuralgic Afterpains.—These appear as a constant aching or darting pain, referred to the uterus itself or to the sacrum. The uterus is firmly contracted and tender; the lochia usually scanty and pale, and the flow not increased when the pain exacerbates.

Suckling usually causes painful contractions. There is often present at the same time a neuralgia of some other part, and the patient is almost invariably subject to neuralgia at other times. This pain is probably nothing more than an exacerbation of the aching which always follows sustained efforts in the uterus as in other muscles, due partly to the neuralgic tendency of the individual, partly to the exalted sensibility of the pelvic nerves incident to pregnancy and parturition. Front pains and excessive foetal activity increase the tendency to these pains.

Rheumatic Afterpains are very rare. According to Cazeaux and Salathé, the contraction of the organ is very incomplete. The pains are very severe and persistent, often metastatic. They are attended by great constitutional disturbance, and might easily be mistaken for peritonitis. The state of suffering diminishes the local discharge and the secretion of milk.

(To be continued.)

ARTICLE IV.—*Fatal Case of Ague, with Delirium and Coma during the Paroxysms due to Cirrhotic Kidney.* By WILLIAM RUSSELL, M.B. Ed., late House Physician and Pathologist to the General Hospital, Wolverhampton.

THE following case came under my notice when in Perth as *locum tenens* for Dr Stirling, and is sufficiently interesting and uncommon to warrant a few notes of it being recorded:—

Mrs L., aged 69, was seen by me on the night of 4th October. She had travelled from Glasgow that day, and was supposed to be in fair health when she left; she had, however, been under treatment for what was believed to be a hysterical condition. Since her death I have received particulars of the case from her Glasgow medical attendant. She had returned from America some three weeks before I saw her, and on the passage home had shown strange mental symptoms. During the first week or two of her stay in Glasgow she was said to have a regular nocturnal "shivering fit," after which she used to wander about in her nightgown. Some time after this she was seen by her medical attendant in one of her "shivering fits," the seizures at this time taking place in the forenoon instead of during the night, when he found her pulse quiet, her surface temperature feeling normal, and, when interested in conversation, that the shivering ceased. He considered the possibility of the case being ague, but was satisfied to the contrary. The urine was examined, and contained no albumen.

When I saw her, she complained of pain and confusion in her head, of frequent defecation, and of only passing a few soybala at a time. She was restless, had a dreamy and somewhat wearied expression, answered questions rationally, but did not recognise

the friend she travelled to Perth to see. I ordered some bromide of potassium, and she passed a comfortable night. On the morning of the 5th she seemed much better and more collected, and the bowels had been freely moved by castor-oil. In the afternoon I was summoned to see her, and found her tossing about in bed, occasionally groaning and moaning loud enough to be heard in the houses on the opposite side of the street. She was quite unconscious, and passed urine and faeces into the bed. The pupils responded to light. Her pulse was beating from 130 to 140, the heart's action being very tumultuous and thumping; the temperature in the axilla was 105° . Large doses of chloral hydrate and bromide of potassium quieted her. In the evening Dr Bramwell kindly saw her in consultation with me. By that time her temperature had fallen to 102° , and the pulse to about 100, and she was regaining consciousness. From the existence of subcrepitant râles all over the left chest, it was suggested she had been knocked down by pneumonia, especially as we ascertained she had had a "shivering fit" during the afternoon. She was put on 5 grs. of quinine every six hours. On the morning of the 6th she seemed quite well again, her temperature being normal, and her pulse 84. During the day Dr Bramwell saw her with me, when we congratulated ourselves and her on the marked improvement in her condition. In the evening I was again called to see her, and found her exhibiting the same train of nervous symptoms as on the previous evening. This annihilated our pneumonia theory. The temperature was $103^{\circ}5$ and the pulse about 130. On investigation I found she had had another rigor, that with the onset of the rigor she became restless, and from that time the nervous symptoms had increased until she became unconscious, tossing about and moaning loudly from time to time. The initial symptoms so resembled ague that I examined the spleen and found it greatly enlarged. This new light on a case that had hitherto been obscure was satisfactory; but I was not satisfied that this was sufficient to explain the extreme severity of the cerebral symptoms, which seemed as out of keeping with an ague, with a temperature of only about 104° , as I believed them to be inexplicable by a pneumonia in a person of her years. I purposed to examine the urine when she became conscious, as I had no doubt she would the following morning. The coma, however, deepened, and she died that night.

By the kind influence of her Glasgow medical attendant the friends gave permission for a post-mortem examination. Dr Gillespie, house surgeon to the Perth Infirmary, kindly assisted me. The *dura mater* was adherent to the calvarium, and had to be removed with it. The *brain* was hyperæmic, as shown by the size and number of the *puncta cruenta*, but was otherwise normal. The *heart* was large and fatty. The *left lung* was bound by old adhesions, and both it and its fellow were œdematous.

but neither presented a trace of pneumonia. The *spleen* was much enlarged, measuring about 6 in. by 4 in., dark and pulpy. The *liver* was normal. The *kidneys* were small and markedly cirrhotic, no part of their capsules stripping off without lacerating their substance.

Although we tolerably frequently have the opportunity of seeing cases of ague in this country, the above case was at first peculiarly difficult, from the meagre and misleading history we possessed at the time; but the point of real interest in the case was the prominence and severity of the nervous symptoms, which at first gave one the idea of being due to active cerebral mischief, and was only given up when the first lull came; then the possibility of their being due to acute pneumonia was contemplated; and, at last, when the true nature of the seizures was evident, and with the light of the autopsy, we see the important rôle played by the state of the kidneys in producing cerebral irritation, manifested by restlessness and delirium during the course of the ague paroxysm, and afterwards a coma, which was ultimately fatal. I have seen patients suffering from other diseases in which a cirrhotic condition of kidney intensified the cerebral symptoms, and it is a complication I have come to regard tentatively as explaining the severity of the nervous symptoms in many cases in which we are apt to give the more prominent disease the onus of their severity, when in reality the more evident affection is quite insufficient to explain such intensity.

The relation between this case and what is described as malignant or pernicious ague is of some interest; for, even in the East, malignant ague seems to be very uncommon, and, when it does occur, kills early, presumably by the intensity of the poison, so that I should be inclined to question the possibility of our seeing such cases at home.

ARTICLE V.—*On Cleft Palate and Incisor Teeth: an Instance of Heredity.* By W. ALLAN JAMIESON, M.D., F.R.C.P., Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

(Read before the Medical-Chirurgical Society of Edinburgh, 7th April 1880.)

AMONG the children and grandchildren of four brothers cleft palate occurs in two, while others present peculiar anomalies in their permanent upper incisor teeth; and as I have not been able to find any notice of this connexion, I have drawn up an account of it which will be found at least interesting, if nothing more. First, then, as to the cases of cleft palate.

D's son, R. M., had, when born, hare-lip on the right side, which was remedied in infancy by a plastic operation. He had also fissure of the hard palate extending through the uvula and soft

palate. Fusion of the alveolar arch had taken place, but the line of union was imperfect and irregular. On the left side there are two permanent incisors, chisel-shaped and notched transversely, while the canine on that side is bifurcated. On the right side there is but one, the central incisor; there is no trace of the second, which, had it been present, would have occupied a part of the alveolus which is depressed, due to contraction and fusion, aided no doubt by the pressure exercised by the cured hare-lip. The canine is deformed and twisted downwards and inwards. I thought that in this case the transverse notching of the incisors might have been due to an illness of some duration during the early part of the second dentition—that it might be, in fact, of a similar nature to the cross furrows and white specks met with on the nails, or the thinner portions of the shafts of the hair met with in circumstances of lowered nutrition. On inquiry, however, I found that R. had never had an illness in his life, so that the imperfection of the teeth must have been due to congenital vice of the tooth-germs.

J.'s son, D. M., has a well-shaped hard palate, but an oval aperture in the velum palatæ. His central upper incisors are strong, white, and extremely broad, while the lateral are small, considerably less, indeed, than half the breadth of the central. The teeth are remarkably regular, the alveolar arch perfect, and no trace of hare-lip.

C. M., sister of the above, has no cleft palate, but central incisors are very large, both in breadth and length; lateral are much smaller, both than is usual and proportionately.

P.'s son, C. M., has only two, the central permanent upper incisors.

A.'s son, R. M., has only the two central upper incisors.

D. M., son of the last-mentioned, has, like his father, only two large strong upper central incisors.

Now, these facts are curious enough; but my friend Dr R. Craig MacLagan came upon the following very singular entry in the parish register of Caputh, in Perthshire:—

"1699, Sep. 16.—T. M., *alias* 'Greesech,' his wife, in Kinkerny, had an infant baptized, called John. Thomas Thomson, yr., in Over Kinkerny, witness."

Dr MacLagan has not been able to discover that T. M. was an ancestor of the cases just enumerated, but he was of the same clan and name, and an inhabitant of the same county, in which the ancestors of the series lived. The word "Greesech," continues Dr MacLagan, the only instance of a nickname occurring among the registers, was supposed by me to indicate his trade, "Greusach" being the Gaelic for a shoemaker; but on further consideration, and especially remarking that when a man's trade or occupation is mentioned, it of course occurs in the same language with the rest of the entry,—that is, in English,—I arrived at the conclusion that it

denoted some personal peculiarity. Now, "craosach" is a glutton, a wide-mouthed fellow (M-Leod and Dewar), from "craos," a wide mouth, a ludicrous name for the human mouth. In O'Reilly's Irish Dictionary the word *craosach* is translated "florid of face," on the authority of O'Curry. It is fully evident, however, that it is the Gaelic expression for a person suffering from hare-lip. Its being spelt *greesech*, though misleading, no way invalidates the translation given. The Welsh word is *crif*, *crifed*, a notch.

We have here, then, on the authority of Dr Craig MacLagan, of whose knowledge of Gaelic philology and etymology there is no need to speak, his recent publication¹ giving evidence on that point—we have here an instance of a tribal, if not a family malformation, traceable back nearly two hundred years.

Taking now the cases of the children of the four brothers, the series forms a most beautiful and instructive commentary on Goodsir's researches on the *Origin and Development of the Palps and Sacs of the Human Teeth*. Goodsir found that in an embryo of the seventh week there still existed a cleft in what was to constitute the hard palate, which displayed the whole of the undivided nasal cavity. This embryonic condition persisted in the first of the series as a fissure extending through the entire palate. Of the condition of the teeth I will speak by-and-by. In an embryo of the second month the cleft in the palate had diminished, existing only as a small angular deficiency in the pendulous portion. This, again, accurately corresponds to the second of the series, where there was an oval aperture in the soft palate, the oval shape being due to pinning of the edges of the aperture in a plastic attempt to cure it, which had failed.

Now to connect these with the peculiarities in the incisor-teeth. According to Goodsir, the first tooth-germ to appear is the anterior superior milk molar; succeeding it is the superior milk canine. In the development of the milk incisors the germs of the two central first appear, close to the median line; and following these, and immediately external, are the two lateral, smaller than the central. When, later on, in the fourteenth or fifteenth week of intrauterine life, preparations are made for the permanent incisors, the central appear first, then the lateral. The germs of these permanent teeth are formed immediately *behind* the inner operculum of the milk tooth follicles. The definition of the upper incisor teeth in *carnivora* is "teeth borne on the intermaxillary bone," and "though the positive existence of this bone as a separate ossific centre cannot with certainty be demonstrated in man," yet an additional argument for its presence seems to be furnished by the facts in the cases cited above. Again, in some cases of hare-lip and cleft palate there is in the centre a detached piece which corresponds in its extent in the palate to the line of the fissure running up

¹ *The Clan of the Bell of St Fillan, a Contribution to Gaelic Clan Etymology*. By Robert Craig MacLagan, M.D., F.R.S.E., F.S.A. Scot., etc.

between the canines and incisors, and never including the latter, nor extending to the *anterior* margin of the alveolus. It corresponds, in fact, to what would be developed from the ossific centre of the intermaxillary bone, assuming that to exist in man. This detached portion bears four milk incisors, but, *as a rule*, only two, and these the central, permanent incisors. The reason for this lies in what Goodsir has shown, viz., that the milk incisor germs are placed more anteriorly than the permanent. Development and ossification proceeding imperfectly in cleft palate, the intermaxillary bones stand apart from the lateral portions of the maxillary arches, and thus no or but small tooth-sacs are formed for the permanent lateral incisors. Now, in the first case of the series, on the side where the hare-lip had existed no lateral incisor was developed. In the second and third cases the central incisors were disproportionately large, the lateral unusually small. There had been a tendency to persistence of the intrauterine palatal fissure, this being shown in the second case by the apertures in the soft palate; in both by the atrophic condition of the lateral incisors. In the remaining three instances the tendency to the defect survived only in the fact of the central permanent incisors of the upper jaw being alone developed.

In a note to his article on Cleft Palate in Holmes' *System of Surgery*, Mr Pollock says:—"How far civilisation or crowded populations may influence congenital deficiencies in the human subject is a question to be hereafter worked out; but it is a curious fact that most of the young of the lions caged in the Zoological Gardens of London are born with defective palates, and, consequently, die soon after birth. As far as our limited means have enabled us to ascertain, it appears that it is not usual for the lion family in a state of confinement to have their young similarly affected, but that this congenital defect is restricted to the lions kept in the Regent's Park, as if some local influence was instrumental to this end." Dr Andrew Wilson kindly wrote to Mr Bartlett, the superintendent of the Royal Zoological Gardens, asking him if any anomalies in the incisor teeth existed in those lions whose paternal ancestry was the same as those with cleft palate. Mr Bartlett, while confirming Mr Pollock's statement as to the frequency of cleft palate among the lion cubs born there, added that "the animals that had the palate complete, and lived, had their teeth quite perfect;" nor had he met with a case like those related among the larger carnivora. Dr Smith informs me that he often meets with cases in which the central permanent superior incisors are alone present; but he had not thought of connecting it with cleft palate, though his researches on cleft palate, presented to the Royal Society of Edinburgh, are well known. It remains, therefore, for further observation to show whether these cases are exceptional, or really bear that relation to cleft palate which I have attempted to show that they have.

ARTICLE VI.—*On a New Antiseptic and Antineuralgic Agent.*
By ARCHIBALD D. MACDONALD.

(Communicated to the Medical-Chirurgical Society of Edinburgh by DR TAYLOR,
8th January 1880.)

MR PRESIDENT AND GENTLEMEN,—I trust that my justification in submitting this paper to you will be found in the considerations that the substance with which I have to deal holds but an obscure position among our materia medica, and that no attempt has hitherto been made to demonstrate its therapeutic uses or physiological properties. My desire, too, is to spread from this Society as a centre some knowledge of an agent whereby at least alleviation of human suffering may be obtained; and if I succeed in satisfying you that it deserves a trial, especially as an antineuralgic remedy, my object will be amply fulfilled. The agent to which I refer is the stearoptene of peppermint oil, or menthol, which is a crystalline solid derived from the oil of the well-known member of the Labiatae, *mentha piperita*, by long keeping or by being cooled to a low temperature. The American oil yields it at the freezing point of water: its chief source, however, is the Chinese and Japanese oil. The crystals seem, too, to come spontaneously from the oil, as both oil and crystals are sent into the market, and the Japanese oil, *as we get it*, yields little menthol. The menthol is imported as Japanese camphor, in small white crystals, which have the peppermint odour, and resemble sulphate of magnesia, which is said to be an adulteration of the Japanese sort to the extent of ten or twenty per cent. The specific gravity is less than water, as menthol, either in liquid or solid state, floats on its surface. An important practical point is this, that liquefaction and volatilization take place below the temperature of the body. Some put down this point at 97° or $97\cdot7^{\circ}$ F. A specimen which I tried volatilized at $93\cdot5^{\circ}$. If placed in an ordinary fire or gas jet, it is seen to liquefy and then burn with a smoky flame. Its formula explains the smoky flame—carbon is in great excess. As to solubility, it only slightly dissolves in cold water; it liquefies slowly in water at 82° F.; quickly at 120° F.; but mostly remains even then as a separate layer. It is, however, very soluble in alcohol, ether, fixed and volatile oils, glycerine, and other solvents only of chemical importance. Two parts of rectified spirit and one of water will make a 1 to 20 solution; but in rectified spirit alone $1\frac{1}{2}$ minims will dissolve 1 grain of menthol. Of glycerine, 40 minims are required to dissolve a grain. The addition of water or alkalis precipitates menthol from solution. Chemically menthol occupies the position of an alcohol with the formula $C_{10}H_{20}O$ —having in its composition four atoms more of hydrogen than ordinary camphor, and containing the radical menthyl. Hence, in addition to other names, it receives the names of menthylic alcohol,

hydrate of menthyl, or hydrous menthene. When acted on by pentachloride of phosphorus the chloride of menthyl is formed, which I suppose, from its alcoholic derivation, to be a general anæsthetic.

Having thus sketched the physical and chemical properties of menthol, I now proceed to consider its *actions*; and

1st, *It is an Antiseptic Agent*.—This was the point from which any thought I have ever given to the subject arose. In the course of the spring of last year I had under consideration and experiment various antiseptics, and was, of course, eagerly watching for something new to turn up. Whilst thus engaged, my attention became fixed upon menthol. I immediately concluded that, *a priori*, menthol, being the homologue of thymol—a recognised antiseptic—might itself be an antiseptic; and this reasoning was further supported by the fact that the essential oils are themselves antiseptics. So that it only remained for me to show by direct experimental proof the almost already established conclusion to be based on substantial grounds. With this view I instituted three series of experiments, the methods and results of which I will now briefly describe.

In the first series I used as bacterial provender a fluid composed of potassic phosphate, magnesia sulphate, lime phosphate, of each 28 grains; white sugar and ammonia, tartrate of each 53 grains; distilled water 12½ ounces,—which is as nearly as possible Cohn's fluid plus the sugar. Into phial No. 1, I poured half an ounce of this fluid with 1 dram of water, and forty-one hours afterwards bacteria had appeared. Seven days later the liquid became quite cloudy and of a beautiful pinkish purple colour, and this I am led to believe is rather an uncommon bacterial phenomenon. I myself had seen blue, green, and yellowish tints, but no pink. In four days more the pink had deepened to carmine, and I then replaced nearly all the fluid by fresh "Cohn," when there was continued production of the pink bacteria or bacterial secretion. The lapse of time has rendered the pink hue very dim; but I now show one portion of the fluid after being partially filtered through unglazed ware, and another portion which passed through the filter, both being still, after time and filtration, pinkish in colour. You have there an answer to the question, "Was the pink coloration due to pink organisms, or to a secretion by them?"—namely, that it was due to bacterial secretion only.

After this digression I mention *Phial 2*, 5i. of a solution of menthol 1 to 1000, with ℥xx. of rectified spirit in the 5ss. of Cohn's fluid. Thirty-three days after—that is, thirty-one days fully after bacteria appeared in No. 1—Dr Hamilton was kind enough to examine this for me, and he found "no putrefactive odour, and no living bacteria or other organisms."

Into No. 3 I put menthol 1 to 2000, under the conditions of the preceding case, and in twelve days the bacteria began to exhibit

themselves, and continued *slowly* to increase. There was here, however, it will have been noticed, the fallacy of the presence of Mxx. of rectified spirit, and to eliminate this I placed in another phial rectified spirit Mxx. with water and Cohn's fluid to 5v. The result was, that in seven days bacteria appeared. In this and the two following series of experiments one-ounce phials were used, and the conditions of temperature and exposure to air, by only placing lightly on the mouths of the phials a little cotton wool to keep out the dust, were maintained among the members of each series for itself as uniformly as possible. The conclusions from this first series evidently are, that solution of menthol 1 to 1000 is a powerful antiseptic, and that at 1 to 2000 its powers begin to fail.

In another series of experiments I used 3ss. of beef tea, with 3i. of another solution added: No. 1 contained beef tea alone, and it was slightly putrefactive in fifty hours after being put up. In No. 2 the other solution was of menthol 1 to 1000 + rectified spirit Mxxiii. Twenty days subsequently bacteria had begun to manifest themselves. No. 3 had menthol 1 to 2000, and in six days was slightly putrefactive; a phial with carbolic acid 1 to 500 "went" within the same time; and on the twentieth day my phial containing rectified spirit Mxxiii. in the beef tea was "quite hazy." The conclusion here is that there was decided antiseptic action in the 1 to 1000 menthol phial; but the fallacy of the presence of rectified spirit was not eliminated, as it showed almost the same result. Yet the series shows still the superior antiseptic power of the 1 to 1000 solution as compared with the 1 to 2000 or with the 1 to 500 carbolic.

In the last series which I mention, instead of Cohn's fluid or beef tea I used simple water with a small piece of beef in each vial, and employed a slightly different plan of experiment. Phial No. 1 contained menthol 1 to 500; No. 2 had menthol 1 to 1000; and No. 3 carbolic acid 1 to 500. To each I added two minims of putrefactive fluid at the end of a week from commencing the experiment, with the following result:—In the case of menthol 1 to 500, thirteen days after the experiment was begun, Dr Hamilton again took the trouble to examine for me, and found only some *dead* rod-shaped bacteria and micrococci. The menthol 1 to 1000 and carbolic acid 1 to 500 phials were actively putrefactive on the twelfth day. Again menthol is seen not only to prevent putrefaction, but is shown to have the power of arresting the putrefactive process after it has begun: it killed the bacteria—they were "found dead." Further, in this instance the 1 to 1000 solution of menthol possessed the power of a solution of carbolic acid twice the strength.

Now, I think that these experiments, added to the *a priori* reasoning on the recognised properties of thymol and the essential oils, as showing that there is room for the conclusion that menthol plays a very prominent part in the antiseptic action of the essential

oil of peppermint itself; and further, that they bear out the proposition with which I began, that menthol is an antiseptic of considerable power. As far as practical results are concerned, I have no grounds as yet on which to go; and, candidly speaking, I expect that in this country at least menthol will be relegated to the antiseptic limbo of thymol; but in those eastern countries, India, China, and Japan, for instance, or even in America, where the objections of small supply and high price cannot apply, its use is more to be maintained. There is one point, however, which I must strongly urge. As I have before said, it is very volatile at and a little below the temperature of the body, and therefore, I think, well suited for penetrating into every nook and cranny of wounds which are already putrefactive, slaying the bacteria which have taken quarters there, and so rendering those wounds perfectly aseptic. In this way, at any rate, would I claim some use for menthol, and some more extended application for much-neglected thymol.

Next let me endeavour to point out some reason why menthol is to be held to be an *antineuralgic agent*. As a preliminary, allow me to mention that, in lecturing on the essential oils, Professor Fraser says, "These oils are productive of irritation to mucous membranes; they are contra-tetanic, and diminish reflex excitability; they are antispasmodics and cardiac stimulants, but large doses paralyze the heart's action; they improve digestion, but may cause gastritis; and they are antiseptics and local anæsthetics;" and he explains further that they paralyze the terminations of sensory nerves. Now, I have reason to believe that these very properties are possessed to a greater or less extent by menthol. That menthol irritates mucous membranes any one can make out by tasting a crystal or two, and this irritation is of the peculiar peppermint kind. Further, it is an interesting fact that after so tasting the crystals or solution there is an intense feeling of cold in the mouth, fauces, and pharynx. Regarding its antispasmodic and cardiac actions, I may tell you that I myself am, so far fortunately, possessed of a heart which occasionally shows rather much excitability of action. Well, I have found that a dose of from $\frac{1}{10}$ to $\frac{1}{4}$ of a grain of menthol steadied the contractions, and afterwards slowed them to a comfortable speed; at the same time I felt slight cerebral drowsiness. Ten or a dozen of the common strong lozenges of peppermint have produced the same effect. That is my own experience so far; but I would not advise the internal administration of menthol unless well diluted or an emetic action from gastric irritation is wished, as half a grain of the crystals has in my own case produced this effect.

As yet I make no attempt to establish the action of large doses, or the contra-tetanic and eliminative points. I would require subjects lower in the vertebral grade than hitherto employed, and in the meantime I leave to others, if they think fit, the vivisection

part of the demonstration. I have shown the antiseptic nature of menthol, and now I deal with it as a local anæsthetic, thus completing the parallelism with the essential oil of peppermint itself.

As an antineuralgic, menthol must be spoken of on the same plan as was adopted in treating of its antiseptic action; there is a certain amount of *a priori* reasoning, supported by actual facts, so far as it was within my power to gain them.

There is a connecting link between the antineuralgic and antiseptic actions in the common ground it finds in those cases of toothache which are due to the irritation of bacteria, either in a carious tooth or in food accumulated in the cavity of a carious tooth. But my starting-point must be from the oil of peppermint. Its application in facial neuralgia is well known. The Chinese had discovered this use of the oil perhaps at as far distant a date as their compounding of gunpowder. Ringer quotes Dr Alfred Wright of Finchley as saying that in China he learned from the natives the practice of painting oil of peppermint on the face in facial neuralgia. Dr Wright uses it also for gout, the relief it gives in both instances being almost instantaneous.

A letter of mine on the subject of the antineuralgic effect of menthol, in the *Lancet*, drew out a short communication to that journal of 6th September last, in which Dr Wright comes to the rescue of the oil. He says:—"Allow me to inform your correspondent, Mr A. D. Macdonald, that as long ago as 19th November 1870 I brought to the notice of the profession, through the pages of the *Lancet*, the efficacy of oil of peppermint as a local application for the relief of pain, especially that of facial neuralgia and gout. I have found the English essential oil quite as effective in its action as the Chinese. The only drawback to the use of the remedy is its strong, and to some persons objectionable, odour." My answer was simple and easy. I said that I gladly accorded to Dr Wright the honour of introducing this practice in England, and, at the same time, I respectfully claimed for myself the merit of discovering what even the Chinese seem to have overlooked—that menthol is the active antiseptic and antineuralgic principle of oil of peppermint. He was dealing with the crude drug, I with its active principle. There was therefore no issue between us. But, on the other hand, I am now to affirm that this Chinese custom, and Dr Wright's application of it, support my proposition that menthol is an antineuralgic. It only remained to put the menthol to a practical test, and the point would be gained. My opportunities were few. I am only a student, and could apply the test personally only in five cases, and it was applied in one case at a distance, reported to me; and there is still another to which I believe I am at liberty to refer,—in all, seven cases. The first trial was made in my own home, and I used the melted crystals of menthol alone, and painted the affected tract from the left angle of the mouth towards the left ear and eye. From the volatility of the remedy,

however, I afterwards used a mixture of 1 grain of menthol and m.x. of clove oil to m.50 of rectified spirit. This was done four times in successive attacks, and on each occasion, as I stated in the *Edinburgh Medical Journal* for August, "relief was had in from two to four minutes, and within one or two minutes at most after this the then existing attack was cured." At first there was a feeling of coolness, and afterwards some irritation felt from the application. This soon passes off. Here the attacks had recurred at eleven hour intervals, but the last supervened at an interval of five hours only. In another instance I used the mixture twice, and did not hear of the neuralgia after the second application. Two cases had only one application, which gave immediate relief. In the case at a distance of which I spoke, the patient had been suffering for a year from what was supposed to be neuralgia arising from a decayed tooth. Fear of breaking the jaw prevented the tooth being extracted. The menthol was applied to the tooth, and painted on externally over the ramus of the left lower jaw, and three weeks afterwards I heard that the patient had been cured.

Now, all that I contend for as to antineuralgic action in the meantime is, that menthol will temporize until constitutional remedies have time to take effect. In the first two cases I gave nothing, but in the last three I ordered a purge of castor-oil, as seen with good effect. The quinine, or arsenic, or iron, or phosphorus will have to be used; but my hope is that menthol will be found an effective substitute for the applications of aconite, or veratria, or atropia in most cases.

The final case of neuralgia, and my strongest one, which I have to mention, is that of a gentleman who occupies an eminent position amongst the surgeons of Edinburgh, and who, after a personal experience of the effects of menthol in solution of forty-eight grains to the ounce of rectified spirit when suffering severely from neuralgia of the supra-orbital branch of the fifth nerve, pronounces the opinion that that solution, though only temporary in its effects, and requiring frequent renewal, is the best external application of the many he has tried. That opinion, gentlemen, is the strongest testimony I have to offer you on behalf of menthol, and of itself would warrant me in asking a trial for menthol.

Since menthol was of use in neuralgia, I reasoned that it would be applicable also in toothache. Here I will only state that I had the opportunity of trying it about fifty times last autumn, and I gave at the same time some castor-oil. In three of the cases temporary benefit only was obtained; one was connected with the shedding of a milk and appearance of a permanent tooth, another was unexplainable, and a third was the toothache of pregnancy, which I contented myself with thinking could only be permanently cured by removal of the constitutional cause. The other cases were immediately relieved. One, I may mention, had been tortured for a week, and had the lips and gums quite

blistered and sore from the application of creosote, mustard, whisky, and other popular remedies.

From neuralgia I easily passed to sciatica, and I have only had the chance of applying menthol in three cases. Permission to do so was very kindly given me by Dr Affleck at the medical waiting-room so late as October last.

In the first case the patient was scarcely able to walk when he entered. I painted the tract of the sciatic, popliteal, and tibial nerves as far as the ankle-joint with a 1 to 10 solution, and the result was that in three minutes he expressed himself free from pain, and as soon as his dress was adjusted he walked out, "being better able to walk," as the patient himself expressed it, "than he had been for thirteen weeks." But this effect only lasted for a quarter of an hour. On next seeing him, however, the effect remained for an hour and a half, he being in the sitting position all the time. In the other two cases I only made one application of the menthol, but both expressed themselves free from pain after the lapse of fully half an hour, when they went out of the waiting-room.

I am aware that menthol has been tried by practitioners here and there for sciatica and neuralgia. Perhaps I may hear some of their results to-night; and I shall be glad to have them, whether favourable or unfavourable to the position I endeavour to maintain.

What I have said is, I think, sufficient to warrant me in the deduction that the Chinese custom, supported by Dr Wright, of painting oil of peppermint in facial neuralgia owes its reputed efficacy to menthol as its active constituent. It is true I have not shown a negative effect from the oil *minus* the *whole* of its menthol, but from a positive point I draw the deduction.

I anticipate one or two *objections* to the use of menthol, which have already been taken elsewhere.

1st. As to price, it was 15s. per pound wholesale in June last, but now is about £4, 10s. or £5. Retail it will cost about 9d. per 5 now. This, I admit, precludes its general use as an antiseptic in this country; but not so in India, for example, or for the special purpose of making septic wounds aseptic, for which chloride of zinc and strong carbolic acid are now used. But the price does not preclude its employment as an antineuralgic, on which action I lay most stress.

2d. It has a vulgar smell, and an odour supposed to be allied to certain social practices. We mask the taste of drugs. Let us mask the smell of menthol, if necessary, to hyperæsthetic olfactory organs by any (to them) more agreeable perfume.

3d. Antiseptically, its insolubility in water is a serious objection, and as a spray I believe it will condense and fall in particles. But will it be necessary in antiseptic surgery to use a spray or all the present complicated machinery? I do not hint that menthol is the substance, but I hope that some day a substance will be found which will reduce the antiseptic system to simplicity. I can only answer

that methylated spirit is the cheapest solvent I know of, and to dispose of this objection I recommend this to be used.

4th. Menthol has been said to act on the imagination of the patient. Very good, I answer; that is certainly the simplest means of effecting a cure, and in hysterical cases would certainly be very effectual. I don't care whether it has a psychological or physiological action, so long as it produces some good effect.

5th. The effect is temporary. That is a valid objection, so far as I at present know. Perhaps from further use and improved methods of application, such as by constantly keeping wet cloths to the part, the effects may be found to be more permanent.

Yet, even if temporary, it is, at all events, some satisfaction to be able to relieve suffering by such means until constitutional agents have taken their effect.

In conclusion, Mr President and gentlemen, I will say that I am conscious of many defects in this my paper on a "New Antiseptic and Antineuralgic Agent," but I shall be satisfied that it has produced some good result, even if it accomplishes no more than to enable you to answer the question in the affirmative—"Are you satisfied that a trial should be given to menthol?"



ARTICLE VII.—*A Case of Cerebro-Spinal Meningitis. Recovery.*
By Dr STEWART, Leven.

R. G., aged 32, a fisherman in summer, and a flaxdresser in winter, was seized, at four o'clock in the morning of the 29th January 1880, with pain in the head so severe as to cause him to cry out and to ask that his head be held. He had felt unwell, and had had a rigor on the previous day. Since October he has complained of pains in his legs, and sometimes of pain in the lumbar region, and has felt weak and unfit for doing a full day's work. In consequence of an unsuccessful fishing season, and of his ill-health, and having a wife and family dependent on him, he has not for some time past received sufficient nourishment.

29th January.—*Forenoon.*—Patient is a slightly built, anæmic, and ill-nourished-looking man, of average height, and is lying in bed crying out with pain, which he says is over the whole of his head; he is perfectly clear in mind, his face is pale, the pupils are equal, and neither dilated nor contracted. The tongue is dry and dark in the centre, and covered with a thick white fur at the sides. The bowels have not moved for three days. Temperature, 102; pulse, 100; respirations, 24. To have a powder containing ten grains of scammony and thirty of jalap at once, and five grains of iodide of potassium combined with ten grains of the bromide every four hours, and to confine his diet to milk and beef-tea.
Evening.—Temp. 99°. The bowels have moved three times. He

expresses himself as much relieved, and says that the pain is now bearable. The examination of the chest reveals no pneumonia nor phthisis, nor does the urine contain albumen.

30th January.—Temp., $98^{\circ}6$; pulse, 90; tongue cleaner. Has had severe pain from one till five this morning, but since then has slept till the time of visit in the forenoon. Iodide and bromide continued.

31st January.—Has had a slight attack of pain through the night, but feels now much better; the tongue is clean; the bowels have moved; and the temperature and pulse are normal. Between eight and nine in the evening the pain suddenly began again in great severity, accompanied with delirium. It was stated that it required great force to keep him in bed. Thirty grains of bromide of potassium and thirty grains of chloral were ordered. At half-past eleven he was seen, and the pain was found to be less violent; his face was pale, and covered with perspiration; the pupils were equal, and slightly dilated. He answered questions quite clearly. Temp., $98^{\circ}4$; pulse, 90; resp., 24. A hypodermic injection containing two-thirds of a grain of acetate of morphia was given, with the effect of producing sleep in the course of a few minutes; and the mixture containing five grains of the iodide and ten grains of the bromide of potassium was ordered to be given every two hours when he should awake.

1st February.—Temp., 101° ; pulse, 90; resp., 30. Has slept till 6.30 A.M., and since then has been sleeping at intervals, and waking up complaining of pain in the head and the back of the neck. He holds his neck stiffly, asking, apparently on this account, assistance when he wishes to turn over. Face pale and sweating, lips anæmic, pupils contracted and equal, has a peculiar depressed, anxious expression, and says that he will not recover. Has vomited the milk once or twice. Tongue dry in the centre, with a thick white fur at the edges. Urine, sp. gr. 1025, contains a considerable amount of phosphates, but is otherwise normal. To have a purge of jalap and scammony, and ten grains of the iodide and thirty of the bromide of potassium every two hours. *Evening.*—Temp., $100^{\circ}8$; pulse, 92; resp., 30. Is more bewildered-looking, drops off to sleep for a minute or two, and then wakes up crying out with pain in his head, and in the course of a few minutes drops off to sleep again. He turns from one side to the other every few minutes. The head is drawn backwards, and he complains of pain in the back of the neck, increased by pressure over the spines of the middle cervical vertebrae. Has slight inability to swallow, and a slight snap of the jaws was distinctly observed. Half a grain of the acetate of morphia was injected subcutaneously.

2d February.—Temp., $98^{\circ}6$; pulse, 76; resp., 22. Has slept continuously till 8 A.M. Is quieter, and apparently quite sensible and rational; does not complain so much of pain in the head.

Complains of thirst; tongue dry. To have, in addition to the iodide and bromide, twenty minims of the liquid extract of ergot every two hours. *Evening*.—Temp., $100^{\circ}1$; pulse, 96; resp., 30. Has been rather restless in the afternoon; complains of his head when it is raised; says that he is better; has a slight difficulty in articulating. *Subsultus tendinum* in the left hand. Had a purge of jalap and scammony, but the bowels have not moved. Half a grain of the acetate of morphia was injected subcutaneously.

3d February.—Has slept quietly through the night, and was asleep at visit in the morning. *Evening*.—Temp., $98^{\circ}6$; pulse, 102; resp., 33. Has been restless through the day, at times sensible and rational, and at other times stupid. Has taken milk freely. Makes no complaint of pain in the head, and pressure over the cervical spine elicits no signs of pain. He complains, however, of pain in his legs, and apparently of the pressure of the clothes on them. He does not answer questions, but mumbles and is irritable when disturbed. Tongue dry, with a thick white fur. Large elevated red spots have made their appearance on the left cheek, and faint spots of a similar nature on the right cheek. The bowels not having moved, an enema was given, which brought away a thin motion. He complained much of pain at the anus during the giving of the injection. No morphia was given subcutaneously to-night.

4th February.—Temp., $98^{\circ}4$; pulse, 98; resp., 24. Has slept fairly well through the night; does not complain of pain in the head. The spots on the face are fading. *Evening*.—Temp., $98^{\circ}4$; pulse, 105; resp., 33. Has slept at intervals during the day, and has had occasional delirium, talking about his work. Complains a little of his head to-night. Tongue cleaner and moister; and skin moister. Urine, sp. gr. 1029, contains abundant urates, but no albumen nor sugar.

5th February.—*Morning*.—Temp., $97^{\circ}4$; pulse, 90; resp., 30. *Evening*.—Temp., $97^{\circ}4$; pulse, 90; resp., 30. Quieter, though still with delirium about work; answers questions, recognises those around him, and has been asking for food. Tongue moist, and cleaner. Had a purge of jalap and scammony. To have ten grains of the iodide and twenty of the bromide of potassium, along with twenty minims of the liquid extract of ergot, every three hours.

6th February.—*Morning*.—Temp., $96^{\circ}8$; pulse 84; resp., 28. Slept well all night, and looks better. A slight facial paralysis of the right side was noticed.

7th February.—Did not sleep quite so well during the night; imagined himself to be at work. Slept quietly, however, during the forenoon, and for some hours in the evening; recognises those around him, and speaks correctly about past events. The right side of the face is clearer, and his articulation is more distinct. *Evening*.—Temp., $97^{\circ}8$; pulse, 84; resp., 28.

8th February.—Temp., $97^{\circ}6$; pulse, 78; resp., 28. Slept well through the night. Quieter to-day; sleeping more; asking for food. Had a motion from a quarter of a grain of elaterium.

9th February.—Temp., 97° . Still improving. Slept eight hours last night without a break.

10th February.—Temp., 97° ; pulse, 72; resp., 28. Is better, and understands his surroundings much better.

11th February.—Sleeps a great deal, but expresses himself more clearly.

12th February.—Temp., $96^{\circ}8$; pulse, 72; resp., 24. Expresses himself quite clearly to-day, is quite conscious of his surroundings, and takes food readily. To take the mixture of iodide, bromide, and ergot three times a day.

16th February.—Has been steadily improving; the temperature has kept about 97° . Speaks distinctly to-day, and says that to-day is the first day that he clearly knows where he is.

27th February.—Gaining strength; was able to be up for a short time to-night.

After this date he continued to improve, and at the end of March went inland for a change of air. During his convalescence he discovered that he was deaf in his right ear.

15th May.—Looking strong and robust, and says that he feels in better health than he has done since October. He is deaf in the right ear, and does not hear the watch on contact. The *membrana tympani* looks healthy. This seems to be the only bad effect left from his illness. He appeared to be so well that he was allowed to resume his occupation as a fisherman.

ARTICLE VIII.—*Some of the Uses of Oil of Turpentine.* By JAMES FOULIS, M.D.

(Read before the Edinburgh Obstetrical Society, 28th April 1880.)

THE term turpentine is usually applied to certain vegetable juices, liquid or concrete, which consist of resin combined with a peculiar essential oil called oil of turpentine. These juices are generally obtained from different species of *pine*, *fir*, or *larch*.

In America it is obtained chiefly from the *Pinus palustris*, which is found growing in dry sandy soils, from the southern part of Virginia to the Gulf of Mexico. This tree furnishes by far the greater proportion of turpentine, tar, etc., consumed in the United States or sent from America to other countries. The *Pinus Tada*, found chiefly in Virginia, also furnishes a large quantity. The *Pinus sylvestris*, which inhabits the northern and mountainous parts of Europe, yields a considerable proportion of the common European turpentine.

In Germany a fibrous substance is prepared from the leaves of

the *Pinus silvestris* and other species of *Pinus* and *Abies*, called *fir-wood*, and a volatile oil is distilled from them, called *fir-wood* oil. It is used both locally and internally as a remedy for rheumatism, chronic catarrh, and chronic skin diseases, and generally for the same purposes as oil of turpentine.

There are many kinds of turpentine, but the chief are as follow :—
1. The common American or white turpentine, obtained chiefly from the *Pinus palustris*, or Swamp Pine; 2. The common European turpentine, known in commerce as Bordeaux turpentine; 3. Canada turpentine, or Canada balsam; 4. Venice turpentine; 5. Chian turpentine. This last variety, lately recommended as a cure for cancer, is obtained from the juice of the *Pistacia Terebinthus*—a tree which grows on the islands of Cyprus and Chio, the latter of which gives origin to the name Chian turpentine. All these turpentines are obtained by wounding the trunks of the different trees and collecting the juices that exude.

In America the turpentine is obtained in the following manner :—During the winter months excavations of the capacity of about three pints are made in the trunk of the tree, three or four inches from the ground. Into these the juice begins to flow about the middle of March, and continues to flow throughout the warm season, slowly at first, rapidly in the middle of summer, and more slowly again in the autumn. The liquid is removed from these excavations as they fill, and transferred to casks, where it gradually thickens, and ultimately acquires a soft solid consistence. Very large quantities are thus annually procured, sufficient not only to supply the consumption of America, but to furnish a valuable export.

The turpentines resemble each other in odour and taste. They are liquid at first, and gradually become thick and solid by exposure, in consequence partly of the oxidation and partly of the volatilization of their essential oil. These turpentines yield by distillation a volatile oil called oil of turpentine, the residue consisting of resin.

Oil of turpentine, or, as it is commonly called, spirits or spirit of turpentine, when pure, is a perfectly limpid and colourless liquid, of a strong, penetrating, peculiar odour, and a hot, pungent, bitterish taste. It is much lighter than water, its sp. gr. being .86 at 72° F. It is very slightly soluble in water, sparingly soluble in alcohol, less so than most other volatile oils, but is freely soluble in ether. It absorbs hydrochloric acid gas in large quantity, and is converted into a crystalline compound called artificial camphor. It dissolves resins, fixed oils, fats, and many alkalies, and neutral crystalline principles from the vegetable world, and also caoutchouc. For a very full account of the preparation, physical and chemical properties, and medical uses of turpentine, I must refer you to the article "*Oleum Terebinthina*," in the *United States Dispensatory* for 1879, p. 642; also to Christison's *Dispensatory*.

There are two uses of oil or spirits of turpentine which I believe are not generally known. I refer to its disinfecting properties and to its power as a parasiticide in skin diseases. And if you will allow me, I will now relate the circumstances under which I first used spirit of turpentine as a disinfectant.

In June 1876 a lady, a patient in private practice, was under treatment for obstruction of the bowels, caused by adhesions between the colon, and a malignant tumour of the left kidney. After great suffering for some days the bowel burst, and the lady died of peritonitis. Three days after death I performed a post-mortem examination. On my way to the house where the dead body lay I bought two ounces of oil of turpentine. I knew there would be a very offensive smell on opening the body. I used the turpentine in the following manner:—Taking off my coat, I tucked up my sleeves to the elbows, and washed my hands and arms thoroughly in the oil of turpentine, and without drying them I at once performed the post-mortem examination. I used the turpentine in this way because I believed that if I could get the epithelial tissues and the grooves in the skin of my hand and arms well occupied by oil of turpentine, there need be little fear of the absorption of the putrid animal substances with which my hands came in contact. The abdominal cavity of the body was full of stinking peritoneal fluid mixed with faecal material from the burst colon—certainly a test case for the oil of turpentine. When I had finished the examination of the body I washed my hands and arms in hot soap-and-water. When I left the house there was not the faintest trace of disagreeable smell about them, and none was perceived even some hours afterwards, when the hands became warm.

Now, any one who has had experience of post-mortem examinations must have frequently observed that, in spite of numerous washings with soap and water, the hands, after a post-mortem examination, remain unpleasantly odorous for a long time, and often, as they become warm, the smell becomes more disagreeable. I shall never forget how offensive I was to my friends when I was dissecting portions of the large whale which, you may remember, was cast on shore at Loughniddry, and afterwards brought across to Kirkealdy. In spite of frequent washings with Condy's fluid, carbolic acid lotions, my hands, as soon as they became warm, would give off a most unpleasant odour of stinking whale's blubber. No doubt the explanation of this was, that while handling the parts to be dissected my epithelial tissues absorbed some of the putrid *fatty* materials; and although I employed frequent washings with watery disinfectants they were not removed. When the hands became warm these fatty materials gave off an unpleasant odour, and continued to do so for a long time.

In all dead bodies, such as we have to deal with in the post-mortem rooms and in the dissecting rooms, it appears that the fat is one of the first tissues to undergo decomposition. It gets rubbed

into and absorbed by the epithelial tissues of the skin, and I suppose it fills up the minute grooves or furrows which exist naturally in the skin. To effectually remove these putrid fatty substances we require a solvent for them which we can use freely, just as we use water. Oil of turpentine most effectually removes all such putrid fatty or greasy materials, whereas watery solutions have but little effect on them.

Since the above case in which I first used turpentine as a means of disinfecting my hands I have used it very extensively, and many friends, at my suggestion, have also used it with equally satisfactory results.

The manner in which I now use the oil or spirit of turpentine is as follows:—Before handling any dirty material, such as a dead body, or other offensive substance, I generally give the hands a wash with the oil, so as to occupy the pores of the skin with it. Oil of turpentine is not greasy, or else there would be danger of the knife slipping in our hands when using it. After the work, whatever it may be, is completed, the hands are well washed in oil of turpentine, using a nail-brush to scrub the fingers, and, if need be, the whole hand. Hot soap-and-water then removes all the turpentine from the hands. A delightful terebene smell is given off, I suppose by the action of the soap on the oil of turpentine. To complete the disinfection the hands may afterwards be washed in a 1-40 solution of carbolic acid. I must warn you against washing the hands in soap-and-water *before* using the oil of turpentine. This latter should always be used first, so as to dissolve out the fatty materials which the watery solutions will not touch. The non-fatty materials may then be removed by soap and water. To gynecologists, to anatomists, and to pathologists, oil of turpentine ought to be of great service as a means of cleansing the hands and the various instruments which they require to use.

I think it but fair to state that, as far as I know, I was the first to introduce it in Edinburgh for the purposes just described. It has been so useful in my hands that I am anxious to recommend its use to all who are not yet acquainted with its great value as a disinfectant. Fortunately it is very cheap, and may be obtained everywhere. The common oil of turpentine is what I generally use.

I have referred to the use of oil of turpentine as a parasiticide in skin diseases. Many years ago I used it as a means of killing small insects. During the last year "ring-worm" of the scalp has been very common in Edinburgh, and no less than seventeen cases in private practice have come under my treatment. The last five cases I treated with oil of turpentine in the following way:—I got a basin of hot soap-and-water. I made my patient hold his or her head over this, and then I poured a little oil of turpentine on all the affected spots. Directly the oil of turpentine begins to smart, as it does after a few seconds, the head is well washed with hot soap-and-water, rubbing in the soap, which seems to have the power of

neutralizing the turpentine. One application of the turpentine in this way is generally sufficient to kill the disease.

Tinea capitis is a parasitic disease, and its spores impregnate and split up the hairs on a level with the scalp. The hairs break off, leaving the affected spots almost quite bald, the broken stumps of the hairs being saturated with the spores of the microphyton *tonsurans*.

Now, it struck me that oil of turpentine would be an excellent application in this affection for two reasons: 1st, because of its power of dissolving out the fatty secretions which surround the hairs at their roots; and 2d, because of its power of destroying the lower forms of life. It certainly kills the parasite of this particular disease, and seldom have I had to apply oil of turpentine more than once to any affected spots. I did not know until last night that it had been used in parasitic affections of the scalp, but in the *United States Dispensatory* for 1879, page 645, the following sentence occurs:—"Oil of turpentine is thought by Professors Von Erlach and Lucke of Berne to be peculiarly efficacious in parasitic affections of the scalp, by destroying the parasites and preventing the development of their spores." I am glad that I have been able to support these statements, as far as ring-worm is concerned.

I have not had an opportunity of trying oil of turpentine in pityriasis, but I think it would be as successful in treating that disease as in many other parasitic skin affections.

With these few remarks on the use of oil of turpentine as a disinfectant and as a parasiticide in skin affections, I now conclude, thanking you for the kind way in which you have listened to my short paper.

ARTICLE IX.—*Clinical Notes.* By ALEXANDER JAMES, M.D.

IN the performance of my duties as clinical medicine tutor for the Ordinary Physicians of the Royal Infirmary, I have opportunities of studying disease in almost all its forms, and through the kindness of those gentlemen I have been enabled from time to time to make a special study of cases of unusual interest. As some of the results of this, I beg to lay before you the following paper:—¹

I. TENDON REFLEX AND CLONUS PHENOMENA.

The first case is that of a patient, Kellie, æt. 30, in Dr Balfour's wards. He has the well-marked symptoms of lateral sclerosis, *i.e.* loss of voluntary power over the muscles of the legs, which are, however, very well nourished, and when he attempts to perform any movement with them he fails almost entirely, owing to the

¹ It was intended that these notes should be read before the Medico-Chirurgical Society of Edinburgh previous to publication. Want of time prevented this being done.

spasms which occur. There is, in addition, some loss of the cutaneous sensibility about the feet and ankles, and this, along with the lightning pains which he complains of, leads us to believe that other parts of the cord are involved. As a rule the cutaneous reflexes are diminished and the deep increased. It is the latter and the clonus which I now wish to discuss.

The ankle clonus is well-marked in both legs (especially the left), either on sudden passive tension or on tapping the muscle or tendon after gradual passive tension. In the left leg the "front tap" contraction can usually be easily induced. By means of tambours, one placed in connexion with the foot and the other with a revolving cylinder, I have obtained tracings of the clonus, and by the chronograph I find the contractions to occur at the rate of about 6·8 per second. The movement is, as usual, perfectly uniform. By grasping the foot and suddenly pressing it inwards or outwards a lateral clonus, due to clonic spasm of the peronei or tibialis posticus can be induced. The "toe clonus" I have not been able to excite.

On getting the patient to stand erect, it is found that in a certain position of the leg as regards the trunk (the significance of which will be denoted by-and-by) a clonus of the gluteal muscles can be induced on stimulating them by sudden pressure. Its tracing shows it to be quite uniform, the time being about nine contractions per second.

I have also been able to obtain tracings of the "knee clonus," but this I propose to discuss in a more detailed manner. In his article on "Tendon Reflex Phenomena," in the *Medico-Chirurgical Transactions* for 1879, Dr Gowers notes that he has met with this knee clonus in two cases in which the patellar tendon reflex was very well marked. It differed from the ankle clonus in both cases, being slower in time, only about two and a half contractions occurring per second. Dr Gowers explains this difference between the intervals of contraction in the knee and ankle clonus by regarding the former as a truly reflex, and the latter as a direct contraction, and in support of this theory he notes that the intervals between the application of the stimulus and the contraction of the muscles are different. As regards the knee reflex, he has found that the interval between the tap on the patella and the contraction of the quadriceps is on the average '10 or '11 second, whilst in the ankle the interval between the tap on the muscle, or front tap, and the contraction of the gastrocnemius he found to be only about '035 or '04 seconds. Thus he says, "The proportion between the frequency of the ankle clonus and the frequency of the knee clonus is nearly as four to ten, and the proportion between the interval which intervenes between a tap on the Achilles tendon and the contraction of the gastrocnemius is to the interval between the tap on the patellar tendon and the contraction of the thigh muscles also as four to ten." He there-

fore concludes that in the case of the knee clonus the several contractions are of true reflex origin, that "the sudden tension of the quadriceps by the weight of the extended leg on the fibres after the cessation of one contraction probably constitutes the afferent stimulus for the next," whilst in the case of the ankle clonus he concludes that the clonic contractions are the result of direct stimulation, the muscle being in a state of extreme irritability developed in a reflex manner as the result of the passive flexion of the ankle-joint.

In the cases which I have been studying I have never been able to induce knee clonus by a stimulus applied to the muscle or tendon, the limb being in the position in which the patellar tendon reflex is usually induced, *i.e.*, the patient sitting, and the legs hanging at right angles to the thigh; but what suggested itself to me was to place the quadriceps muscle under the same conditions as is the gastrocnemius when clonus can be induced in it, *i.e.*, in a state of passive tension. On strongly flexing the leg on the thigh, and so stretching the quadriceps, a tap on the tendon or muscle, however, produces neither reflex nor clonus, but I found that with the leg slightly flexed (about 25° to the line of thigh) a tap on the tendon usually produced a well-marked clonic spasm. This, however, although quite distinct, never lasted long. The greatest number of contractions I estimated to have been about twelve; usually they did not exceed four or five. I was able to obtain several tracings of this clonus, of which A is a specimen.



a, Tracing of knee clonus; b at d marks where the tendon was tapped; c, Chronograph tracing 50 per second.



B Tracing of patellar tendon reflex, where leg hanging over edge of bed, to show initial slight fall. The writing needle was flexed to the leg about three inches above the ankle.

The upper line shows the clonus, the middle the instant at which the tendon was tapped, and the lower is the chronograph tracing. The clonus tracing was obtained by placing the button of the

receiving tambour in contact with the quadriceps muscle or tendon, close to the knee-joint, and is the only one of the three for the comprehension of which more detailed description is necessary. It will be noticed that in all there is at first a slight fall, and that this is followed by a rise showing usually four distinct undulations. The primary slight fall I believe to be due to the fact that at the moment of contraction of the quadriceps there is not only a raising of the leg on the knee-joint, but also a slight downward movement of the distal end of the thigh. The extent of this downward movement will for physical reasons be greater when the leg is slightly flexed as regards the thigh, than when it is at right angles, as obtains when the patient is sitting with his legs hanging over the edge of a bed or table; but even under these latter circumstances a tracing of the knee reflex shows an initial slight fall (*see* B). The rise and its undulations are, of course, caused by the clonic contractions, the muscle not undergoing complete relaxations during the intervals. On studying this tracing with reference to the periods of stimulation and the chronograph vibrations, we find that the contractions occur at the rate of about seven per second. This is slightly more frequent than the ankle clonus, and is quite different from the knee clonus as described by Gowers. We further find that the interval between the tap on the patellar tendon and the contraction of the quadriceps is about $\cdot 025$ second. This is about the same as Gowers has found in the ankle reflex, but is different from what he has found in the case of the knee. The conclusion is that (in this patient at anyrate) the knee clonus is much the same in mode of production as the ankle, and probably also the hip, although in the latter I have not been able to estimate the interval which elapses between the application of the stimulus and the occurrence of the contraction.

But several other important considerations at once present themselves. Why is it that in lateral sclerosis this clonus can be so readily elicited in connexion with the different muscles? Gowers explains the action of a stimulus in producing it by considering that the "passive extension leads to a reflex irritability, a hair-trigger susceptibility to local influences, an incipient contraction excited to developed contraction with extreme readiness, and that this irritability is at its maximum after the cessation of a previous contraction."¹

But have we grounds for considering that the passive extension is the cause of this reflex irritability? In the case of the ankle it might seem to apply. Here it is found that clonus, readily induced when the muscle is tense, can be stopped at once on relaxing it. But if tension of muscle were the sole cause, clonus should be most readily induced when the tension is greatest, as, for example, on pushing up the foot with the leg perfectly straight

¹ *Medico-Chirurgical Transactions*, 1879, p. 300.

In this case, however, as in others which I have observed, and as noted by Gowers (*Spinal Diseases*, p. 23), it occurs most readily when the leg is slightly flexed.

In the case of the knee it will certainly not apply, for here the clonus can be induced only when the leg is but slightly flexed, and when, consequently, the quadriceps is rather relaxed than tense.

What next suggests itself is, that this so-called "irritability" of the muscles may be in some way connected with the co-ordinated movements which the limbs have to perform. For example, in walking, in making the step from one foot to the other, we first cause contraction of the gastrocnemius of the rearmost leg, by which the heel is raised. Then, the leg being slightly flexed on the thigh, we contract the quadriceps, and so bring forward the foot; then, having placed the foot in front, we find, as we begin to bear on it, that the gluteal muscles contract. Now, it will be found in the case under consideration that it is precisely when the limb is placed in the positions in which it is when any of these muscles are contracting that clonus of them can be induced.

Further, that this "irritability" is specially manifested at certain definite positions of the limb, rather than due to tension of the muscles concerned, can be shown by experiment on ourselves. On testing this we find that clonus of the gastrocnemius can be most readily (if not only) induced when sitting on the edge of a chair, with the foot resting on the ball; and we find also, that as regards the knee, we can most readily induce it with the leg slightly flexed on the thigh, and the toes drawn up. Clonus of the muscles of the upper arm can be best induced voluntarily when the arm is semiflexed. I have obtained tracings of these from five healthy adults, and in two of these I was also able to obtain tracings of a "head clonus." The numbers of contractions per second of these I give in the following table:—

	Ankle.	Knee.	Arm.	Head.
A.	7·4 per sec.	8·4 per sec.	9·5 per sec.	
B.	8·0 "	7·3 "	8·8 "	
C.	6·2 "	7·0 "	7·5 "	12·4 per sec.
D.	6·0 "	7·6 "	9·5 "	13·0 "
E.	6·7 "	6·5 "	8·4 "	

I have also endeavoured to discover if the number of contractions can be varied at will, but have concluded that if this occurs at all it can only be to a very slight extent. Thus, in the arm clonus of A. (my own case), I found that by the greatest effort I could produce 10 contractions per second, whilst in ordinary circumstances 9·5 is the number. In the ankle clonus of B. I found that on his being asked to increase the number of contractions there was really a diminution from about 8·6 to 8, whilst in C. there was in similar circumstances an increase from 6·2 to 6·5 per second.

And now, having so far considered the phenomena of clonus, can we say any more as regards its production in health and disease? The facts (1) that it occurs most markedly in certain definite positions of the limbs; (2) that in these positions it can be set agoing voluntarily, and that when so it seems in most individuals to continue for a time, to a certain extent, independently of the will; (3) that the rate of contraction cannot be materially altered by the will; and (4) that in lateral sclerosis it can be set agoing by peripheral stimulation when the limb is placed in one or other of certain definite positions,—suggests to us, I think, some ideas as regards the nature of its production.

We know that the nervous axis is formed of cells and of fibres, afferent, efferent, and those connecting cells, and we know that on peripheral irritation afferent impulses are carried along certain tracts and cause stimulation of certain cells, and that by these, impulses are generated which pass along definite efferent tracts. We further know that for the proper performance of any movement the muscles employed must be co-ordinated, *i.e.*, when some, singly or in groups, are contracting, others must be relaxing, and that these must alternate as regards contraction and relaxation. All this implies that in the nerve centres at one time one set of cells must be stimulated, at another time another set, that the resulting motor impulses must travel now along one tract of fibres, now along another. When, therefore, we consider the complicated movements which we daily unconsciously perform, and the even more complex processes in the nerve centres, etc., which these necessitate, we can, I think, more easily understand how clonus occurs, and why most markedly or solely in certain definite positions. Thus, in ankle clonus, we may suppose that, with the gastrocnemius somewhat contracted so as to raise the heel, and the leg somewhat flexed on the thigh, the effect of a stimulus applied to the muscle will, like a wave, be carried to cells in the cord, and that the impulse there generated will be carried from these back again to the muscle as a stimulus to contraction, *without loss by escape along other tracts to other cells or muscles*. And we are the more inclined to believe this when we remember that, in the act of walking, impulses must pass along certain definite tracts without escape thousands of times every day. Similarly with the knee clonus, arm clonus, etc.

Conversely, we may suppose that the fact of its being difficult or impossible to excite clonus in muscles when the limbs are not in such positions, even although the muscle concerned may be in a state of greater passive tension than before, is due either to increased resistance in the appropriate nerve channels, or to the escape or overflow of the impulse to others.

I therefore would suggest that the position of the limb as affecting through the muscle the nerve tracts and centres in the cord is, rather than tension of muscle, the important item in the production of clonus.

But how is it that if, in a case of lateral sclerosis, we place the limb in a certain position and apply a certain stimulus peripherally, we excite a clonus which will last a longer or shorter time, and which is beyond the control of the will; whilst in health, in like circumstances, this either does not occur at all, or, if it does, only to a very limited extent?

Before we attempt to discuss what may be said in answer to this query, let us see if there is nothing else of interest to be derived from a study of these tracings of healthy clonus.

On the justifiable assumption that for each contraction there must be the passage of an impulse from the muscle to the centre in the cord and back to the muscle, we should expect to find that in the clonus of muscles distant from the cord the intervals between the contractions would be greater than in those in closer proximity to it, as in the former a greater length of nerve has to be traversed. A reference to the notes of the tracings does, I think, bear this out. In the head clonus, in the cases in which it could be obtained, the number of contractions per second was the greatest, and the arm clonus was next in number to this. In three out of the five cases the knee clonus was more rapid than the ankle. In the two cases in which the knee clonus was the slower, very great difficulty was experienced in producing it as compared with the ankle clonus, and this I believe to be the explanation of their being exceptional.

I further endeavoured to obtain data on which to form an estimate of the distances which the nerve impulses must travel in the case of the different muscles, and I found that in a man 5 feet 11 inches in height the distance from the 12th D. V. to the middle of the leg was 42 inches, and to the middle of the thigh 27 inches. From the 5th C. V. to the middle of the upper arm the distance was about 20 inches. Seeing, then, that the distances to be travelled are so unequal, and that the differences between the intervals of contraction are often comparatively slight, we may conclude that the great proportion of the time is taken up at the peripheral and central terminations of the nerves, and not in their course, and this further leads us to expect such exceptions as the two cases of knee clonus before mentioned.

Note further that in the case of lateral sclerosis which formed the subject of these notes the ankle clonus was 6·8, the knee 7, and the hip 9 contractions per second.

Can any relation be traced between the clonus of health or disease and the normal muscle contraction? The latter is, as evidenced by the muscle tone, caused by successive stimuli, and according to Helmholtz and others these number 19·5 per second. As to this being the same for all muscles, there is, I think, some room for doubt. I have examined and compared the "muscle tone" in the corresponding muscles (biceps) of boys and men, and in different muscles (masseter, biceps, gastrocnemius) in individual cases, and have concluded that the farther distant they are from

their nerve-centres in the cord, the lower is the pitch of the tone resulting from their contraction.¹ Should I be correct in supposing that this, like the clonus, is explained by the differences in the distance along which the nerve impulses have to travel, the connexion between clonus and normal muscle contraction is evident. Thus in A. the arm clonus was 9·5, whilst the normal stimuli to the upper arm follow one another at (as nearly as necessary for our argument) double that rate. We have only to suppose, then, that the difference between normal bracing of the muscles of the upper arm and clonus is that in the former the stimuli pass simultaneously to biceps and triceps muscles, whilst in the latter they pass alternately. Similarly with the thigh and gastrocnemius, the fewer contractions per second of the clonus corresponding with the lower-pitched muscle tone.

And now let us return to the query which we left unanswered at page 141. Why is it that in lateral sclerosis clonus can, under certain conditions, be readily induced by peripheral stimulation, and will go on independently of, and to a great extent in direct opposition to, the will, whilst in health this does not occur? The theory that it is due to an irritability of the reflex mechanisms in the cord, though it does not give us much information, is conceivable enough, for we may suppose that just as sclerosis of the posterior columns manifests itself to the cells in the brain by lightning pains, etc., so in lateral sclerosis the condition of the cells in the anterior cornua cannot be one of continued quiescence. But there are other considerations. It is well known that when the brain of a frog is removed, reflex action is developed to a much greater extent than in the entire animal; and many interesting experiments might be mentioned to show that stimulation of the optic lobe will restrain or inhibit this function. It has, therefore, been concluded that in the optic lobes in the frog, and there or thereabout in other animals, there is an inhibitory centre. This theory, however, although useful to us in many ways in the present state of our knowledge, can never be regarded as an exact explanation of the phenomena. Apart from the experimental evidence against it, *e.g.*, that stimulation of any afferent nerve will, in the absence of cerebrum, optic lobes, and medulla, cause inhibition of reflex action, we must remember that, for general reasons, an increase of reflex action on removal of the brain is to be expected. In the entire frog the effects of a peripheral stimulus are carried in part to the motor centres in the cord, and in part to the brain; in the former resulting in motion, in the latter in consciousness. In the

¹ It might be said that the size of the muscle had to do with the different pitch of the muscle tones. It may be an argument against this to mention that the toe-clonus described by Dr Gowers (*Med. Chir. Trans.*, vol. lxii. p. 288) was about the same in rate as that of the gastrocnemius. Compare Herbert Spencer's paper on the *Physiology of Laughter*, and also his *First Principles*, 3d edition, p. 238.

decapitated frog, on the other hand, the nerve channels leading to the brain are cut, and hence the effects of the peripheral stimulus are manifested as motion alone. This suggests a very simple method by which what may be called the "mechanical equivalent" of consciousness may be obtained. To do so we have only to connect a muscle—say the gastrocnemius of a frog—with a given weight, and to apply a stimulus of a given strength, so as to produce reflex contraction of that muscle. The difference in the height to which the weight is raised before and after decapitation will, *ceteris paribus*, yield this equivalent. I am, I trust, sufficiently acquainted with physiological experiments to know the value of the term *ceteris paribus*, and I shall not at present discuss this subject; but in support of these ideas as regards inhibition or inhibitory centres, I take the liberty of quoting the following from George Henry Lewes's *Physiology of Common Life*, vol. ii. p. 201:—

"What is the process of control? Every action is a response to a sensitive stimulus. Muscles are moved by motor nerves which issue from nerve centres; these nerve centres are excited by impressions carried there either by sensory nerves going from a sensitive surface, or by impressions communicated from some other centre. A stimulus applied to the skin excites a sensation, which, being reflected on a muscle, excites a contraction. But, instead of the sensation exciting a muscle, it may be reflected on some nerve centre and excite a reflex feeling. This secondary or reflex sensation may either play upon a muscle or upon some other centre, and *this* will excite an action. Thus it is that the same external stimulus may issue in very different actions. We decapitate a frog, and half an hour after prick or pinch its leg; the frog hops or suddenly draws up its leg. We now prick or pinch an uninjured frog in the same way, and we mostly (not always) observe that its leg is motionless; it does not hop away, it only lowers its head and perhaps closes its eyes; a second pinch makes it hop away. In the decapitated frog the action was reflex; the stimulus transmitted from the skin to the spinal cord was directly answered by a contraction of the leg. In the uninjured frog the stimulus was also transmitted to the spinal cord, but from thence it ran upwards to the brain, exciting a reflex feeling of alarm, but, though alarmed, the animal was not forced into any definite course of action to secure escape; and while thus hesitating, a second prick came, and the urgency of the sensation then caused it to hop away. This hopping was reflex, but it was indirectly so; it was prompted by a reflex feeling, which, in turn, had been excited by the original sensation."

But will this increase in the reflex function of the cord which occurs when the brain is removed, on the above theory as to the nature of its production, account for the increased tendon reflex and clonus of lateral sclerosis? On the theory that they depend on the results of peripheral stimulation being kept within certain

channels, it will, I think, go far towards doing so, for in this disease their passage towards the brain will be more or less blocked. The argument that the fibres of the lateral columns have a centrifugal and not centripetal function, and hence that their being sclerosed will not prevent the access to the brain of the effects of any peripheral stimulation, is to my mind hardly valid, inasmuch as a consideration of the evidence will, I think, show that the conduction of centrifugal impulses is not the only function of motor nerve fibres. The consideration of the muscular sense leads us to believe that they will in addition conduct centripetally; at any rate it will, I presume, be admitted that this theory is not more hypothetical than one which supposes them to conduct inhibitory impulses from a centre in the brain above to nerve cells in the cord below.

(To be continued.)

Part Second.

REVIEWS.

Rest and Pain : a Course of Lectures on the Influence of Mechanical and Physiological Rest in the Treatment of Accidents and Surgical Diseases, and the Diagnostic Value of Pain. By the late JOHN HILTON, F.R.S., F.R.C.S., Surgeon Extraordinary to Her Majesty the Queen, Consulting Surgeon to Guy's Hospital, etc., etc. Edited by W. H. A. JACOBSON, F.R.C.S., Assistant-Surgeon to Guy's Hospital, and Demonstrator of Morbid Histology in the Medical School. Third Edition. George Bell & Sons, London, 1880.

THE first edition of these lectures was published soon after their delivery, at the Royal College of Surgeons of England, in 1860, 1861, and 1862. A second edition, edited by Mr Jacobson, but supervised by the author, appeared in 1876; and now, since his lamented death two years ago, this third edition has been prepared by the same friendly editor. We may say, once for all, that Mr Jacobson has done his part remarkably well, and added many valuable annotations.

On looking back through former volumes of this Journal, we have failed to discover any review of this very important work. This was an oversight, and we hasten to acknowledge it.

We remember the late Mr Henry Earle, of St Bartholomew's Hospital, saying to his clinical students, on more than one occasion, that he believed a very good book might be written on "Rest" in the practice of surgery. He was a thoughtful man and quite an enthusiast in his profession, but, being taken away at a comparatively early age, had no time for realizing his idea. That was left

for Mr Hilton, who has elaborated the subject with great success, and produced a work which is already a surgical classic, and promises, if we mistake not, to be regarded as a landmark, a milestone, in the history of our profession; for the doctrine announced and amply illustrated applies to medicine as well as surgery.

The heading of every two pages throughout the volume, "The Therapeutic Influence of Rest, and the Diagnostic Value of Pain," expresses with force and terseness the substance of its contents. Our limits prevent us from entering into many details, but two or three points may be referred to which may serve to convey some conception of what the author aims at.

By careful examination into the precise seat of pain, with an accurate recognition of the origin and distribution of the nerves implicated in the disease or injury, a well-informed and observant practitioner will generally be enabled to secure *rest* to the part which really needs it, and thereby enable Nature to effect a cure. Mr Hilton has done valuable service, we think, by directing attention to the fact, too often overlooked, "that the same trunks of nerves, the branches of which supply the groups of muscles moving any joint, furnish also a distribution of nerves to the skin over the same muscles and their insertions, and that the *interior* of the joint receives its nerves from the same source." We can see the important bearing of this fact on injuries and diseases of joints, how it explains their bent and fixed position, and suggests the way in which they are to be best treated and relieved. Many of the cases narrated—and in this he is a master—illustrate the extreme importance of a precise and accurate knowledge of the distribution of the nerves in all regions of the body to the practical surgeon. And this feature in the book renders it a valuable one for young students of anatomy, by showing them that details, which might be carelessly slurred over, are really of practical moment in the future practice of their profession.

Another point which Mr Hilton dwells upon and presses on the reader's attention may be mentioned. It is this, that most diseased joints, usually credited to a strumous diathesis, and therefore deemed hopelessly incurable, originate in slight injuries which have been overlooked or neglected, and admit of being cured even at an advanced stage, by being kept at perfect rest for a prolonged period. He shows by numerous examples that so-called strumous joints readily ankylose, and that chronic abscesses and sinuses heal and close up under the same treatment. He makes a valuable suggestion, as we think, in regard to the best mode of opening deep-seated abscesses. Having often seen lives placed in great jeopardy by the incautious use of the lancet, he devised a new method, which he employed for many years without seeing a single inconvenience arise from it. It is this: if you have to open a deep-seated abscess in the orbit, for example, in the axilla, in the neck under the cervical fascia, upon or under the

periosteum in the thigh, proceed in this manner:—Make an opening through the skin and superficial fascia; introduce a grooved probe or director through the intervening tissues; a little stream of opaque serum or pus will show itself; take a pair of dressing forceps and run the closed blades along the groove of the director into the swelling; now opening the handles, you at the same time open the blades situated within the abscess, and so tear open the abscess. By keeping the blades of the forceps open during the withdrawal of the instrument you leave a lacerated track or canal communicating with the collection of pus which will not readily unite, and will permit the easy exit of the matter.

The whole book, containing eighteen lectures and consisting of 498 pages, with a useful index, will repay perusal. It throws a fresh light on many perplexing forms of disease, and is the outcome of a very extensive experience and much wise consideration. The style is that of an educated, scholarly man, and, as already indicated, his narration of cases is characterized by an attractive human interest and a certain amount of dramatic power.

These remarks lead us to say, that a work so certain to live ought to be preceded by a short memoir and a portrait of the author, who was doubtless a man worth knowing. We have searched in vain for anything beyond a very meagre notice of Mr Hilton in the weekly journals at the time of his death. If there is to be no reliable memoir in the Guy's Hospital Reports, might not the New Sydenham Society reprint the volume, with a graceful obituary tribute analogous to that which Sir Thomas Watson wrote in honour of his old friend and cotemporary, Dr P. M. Latham.

Alcohol: its Function and Place. By THOMAS R. FRASER, M.D., F.R.S., Professor of Materia Medica, Edinburgh University. Edinburgh: David Douglas: 1880.

THIS is a lecture which was delivered by Professor Fraser before the Edinburgh University Temperance Society, and is printed by request. At the commencement Professor Fraser states that he is not a total abstainer—at the same time he is fully alive to the evils of intemperance. He claims for himself that because he is a partaker of alcohol, therefore he is a more impartial and trustworthy exponent of its "function and place" than if he were an abstainer. It seems to us that one who makes "personal acquaintance almost daily" with stimulants is as likely to be prejudiced in their favour as any rabid teetotaler could be against them. Let us examine first what is said in favour of alcohol.

1. *A small quantity well diluted*, when introduced into the stomach, "causes the gastric juice to be poured out abundantly, and stimulates the muscular fibres to contract." "The effect of all this

is that the digestion of food is made more rapid and complete." In connexion with this statement various questions arise. Ought this not to be unnecessary where digestion is healthy; and will such a stimulation of a healthy stomach not be liable rather to derange than benefit digestion? Is it not probable that it is only in those who are to a certain extent habituated to the use of alcohol that an apparent beneficial action occurs? Again, is it not the fact that the "small dilute" dose will have to be increased and strengthened as the stomach becomes accustomed to the stimulant or irritant?

2. By the action of alcohol "the minute arteries are dilated, and at the same time the force of the heart's contractions is increased;" this brings more blood to the organs and structures, and consequently they do more work. Now, Professor Fraser very properly limits the use of alcohol for this special effect to exceptional circumstances. It would hardly do for any person artificially to extort more work out of himself and his unfortunate organs than they were intended to produce habitually—otherwise he would certainly, and as a necessary consequence, come to an untimely break up of all his faculties. The example which Professor Fraser gives is that of a person suffering from loss of appetite after over-fatigue. He gives only two alternatives—rest, and excitation of the circulation—and the latter he considers is best effected by a small quantity of alcohol. We take exception to this. There are other modes of restoring appetite and digestion. The introduction into the stomach of a rapidly absorbable and easily digested nutrient fluid at once restores the appetite by invigorating the body and dilating the bloodvessels—not by paralyzing them, as alcohol does, but by filling them with more fluid. In fact, a draught of water is quite equal to the fulfilment of the latter indication, and will often restore the appetite if there be not too great prostration from fatigue. We would take exception especially to the statement that alcohol is the best means of restoring the appetite when it is absent from over-fatigue. In the first place, we consider that we have mentioned better means; and in the second place, we know—indeed, it is a well-known fact—that it is dangerous to take stimulants when one is over-fatigued and starving, as the alcohol is so rapidly absorbed that intoxication may be readily produced by a quantity which, under ordinary circumstances, might be taken without producing any such unfortunate result.

3. In another place Professor Fraser says "that in the existence of fatigue the intellectual faculties may be strengthened and refreshed by a small quantity of alcohol." But as the author adds that the effect is "only temporary" and "of short duration," we shall refrain from criticising the statement farther.

4. We have next pointed out "that alcohol has the property of lessening the destruction of the tissues"—this being founded on the statement that it diminishes the excretion of carbonic acid and

urea. This is also brought forward as a proof (and, as far as we can see, the only one) that alcohol is a food. Now, that alcohol diminishes the excretion of urea and carbonic acid we do not deny; but that this action is beneficial, or to be resorted to regularly, so that this substance may be considered and used as a food and a regular article of diet, we object to entirely. We consider that the diminution of the excretion of urea and carbonic acid is more likely to be detrimental to the body than beneficial, and that it in all probability is the explanation of the appearance of gout and unwholesome fat in those who indulge in stimulants, even in so-called moderation. We cannot see how the fact (if it be a fact) that the waste of the tissues is diminished can make alcohol a food. This, however, is apparently the best thing that can be said in favour of alcohol; but, on the other hand, the laurel is torn from its brow by tea, which is a drug or food (if it must be so) which effects this action in a much better and safer manner, when taken in moderation and properly prepared.

5. The power that alcohol has in dilating the smaller blood-vessels is brought forward as an argument for its use in the case of persons benumbed with exposure to cold. Again we take exception to this statement, and consider that a warm drink of some nourishing fluid will be both safer and more efficacious.

6. Dr Fraser returns to the action of alcohol in preventing waste, and ascribes to it the power of sustaining life on an insufficient diet. This we consider an unsettled question, and one which will be very difficult to decide, on account of the many fallacies which are apt to crop up in the course of observations and experiments. But even granting that alcohol had this power which is ascribed to it, that could be no argument for the daily or habitual employment of it for this special purpose of limiting waste, for, as Professor Fraser says himself, this action "impedes the transformations and combustions in the body which are necessary for the production of force."

7. The last argument brought forward in favour of alcohol is one we are astonished to see in a scientific lecture. "The shy man acquires some self-confidence, the taciturn becomes loquacious, and society thereby gains some advantage." Now, we fail to see how this is any reason for the employment of stimulants.

Having thus tried to convey an idea of the faint and doubtful praise which Professor Fraser has bestowed on alcohol, we shall now give a short note of what he says on the other side. For our author most honestly says what he thinks on both sides. Taking the sentences as they come, we read—

"Dyspepsia is apt to be produced in those who habitually or frequently partake of alcohol in a concentrated form, as nips, for example, in the intervals between meals."

"With larger quantities these effects (the dilatation of blood-vessels, etc.) are more marked, and with repeated quantities, *not*

necessarily excessive in amount" (the italics are our own), "the dilatation of some of the vessels becomes permanent, . . . and the result is the tell-tale rubicund complexion or ruddy nose which one occasionally sees." (Be it remembered that this same "permanent dilatation" may occur, and doubtless does occur, not only in the nose, but in the internal organs and other parts, where disease and premature decay are thus generated.)

"I am inclined to think that the mental phenomena caused by even moderate quantities result from the combination of a stimulant with a paralyzing action, and that the higher faculties of the brain are usually enfeebled or paralyzed, while the emotions and other faculties of a lower order are stimulated."

"In moderate quantities it slightly, and in large quantities more distinctly, lowers the temperature." "The dilated vessels permit of a rapid cooling of the blood when the surface is exposed to a low temperature." "The dilated vessels also permit of a *sudden* cooling of the blood to take place, and internal congestions and inflammations are thereby caused; and so it is that the diseases of the kidneys, of the liver, of the brain, which are of frequent occurrence in those exposed to vicissitudes of climate, are not altogether to be explained by climatic influences."

Referring to the power of alcohol to check the elimination of urea and carbonic acid, Dr Fraser says, "Those who take alcohol even moderately . . . are apt to become stout from a deposit of fat under the skin; and those who take alcohol immoderately are, in addition, very likely to have fat deposited in some of the organs of the body, where its presence constitutes the disease fatty degeneration." But what are moderation and immoderation, even in connexion with this one point?

Professor Fraser admits that men work as well without alcohol as any one can do with, and that, especially in mental labour, the work done is of superior quality. At the conclusion of the lecture, after stating that the evils of intemperance are too numerous and palpable to necessitate detailed description, and after drawing attention to tables which show how intemperance produces disease and shortens life, while total abstinence prolongs life beyond the ordinary calculated average, Professor Fraser says:—

"Now, I believe that mistaken ideas with regard to the action of alcohol have much to do with its abuse. Even among intelligent and educated persons it is looked upon as an agent which greatly increases the capacity for work, decidedly elevates the temperature of the body, and gives strength to the feeble. Erroneous conceptions of this description have led to its habitual use in conditions where that use can result only in evil; and habits of drinking have thereby been most gratuitously originated."

We hope that none of the author's statements to which we have first alluded will give rise to "mistaken ideas" when read by the

"moderate" public, who are only too glad to get any excuse, or shadow of excuse, for continuing their favourite indulgence.

The concluding words of Professor Fraser we can most heartily endorse:—

"The drunkard of even the best type is morally and mentally a child, in so far as his ability to resist alcoholic temptation is concerned." . . . Yet, "In those very districts of our towns where the greatest number of the immoderate in the use of alcohol are to be found we permit the greatest number of temptations to immoderation to exist. With all due regard for the liberty of the subject, I think there is room for prevention, in the form of restriction of the facilities for immoderation, to be brought into operation; and while prevention will not in itself eradicate the evils which we all deplore, it may confidently be expected to have a more immediate effect in diminishing these evils than any of the other means to which I have made reference, and to whose more tardy influence we are to look for the radical cure of intemperance."

From what we have been able to give our readers of Professor Fraser's lecture it will be evident that it is a most valuable addition to the literature on the subject of alcohol and its actions. And though we do not agree with all in the pamphlet, still we do not hesitate to recommend its perusal to all interested in the subject.

Tracheotomy in Laryngeal Diphtheria. By ROBERT WILLIAM PARKER. Published by David Bogue, London.

THIS is a book of 79 pages, devoted to the consideration of the subject of tracheotomy in diphtheria and croup.

The primary objects of the work are to advocate the utility and importance of local treatment in cases of laryngeal diphtheria (membranous croup—the author considering diphtheria and croup to be identical etiologically), and to give a short but detailed account as to how this should be accomplished.

The author divides his material into five chapters, of which, perhaps, the fourth is the most important to those to whom the book is more particularly addressed, it dealing with the details of the treatment of the patient after the operation. The remarks upon the use of alkaline spray applied through the tube for the purpose of softening and disorganizing the membrane in the trachea; on the removal and cleaning of the tube; and on diet, are good.

The author recommends, instead of the usual quarter circle tube, an angular one, which he thinks corresponds better with the natural direction of the trachea, and is so less apt to cause irritation by pressure on the interior of the air passage.

Although there is nothing particularly new or striking in the book, it may be useful to the young surgeon desirous to look up any of the different points in connexion with the subject, which are here put shortly and distinctly.

On Preservation of Health in India: a Lecture addressed to the Royal Indian Engineering College at Cooper's Hill. By Sir JOSEPH FAYRER, K.C.S.I., LL.D., M.D., F.R.S. May 17, 1880. London: Kirby & Endean, 190 Oxford Street.

It is obvious that this monograph, written by one so exceptionally qualified by his professional attainments, prolonged experience, and sound judgment as Sir Joseph Fayrer, must be very valuable to all young men entering upon a career in India. To engineers, who are often necessarily placed in isolated positions of peculiar exposure as regards sanitary dangers, it must be specially important, because they cannot derive from the experience of associates those timely warnings and suggestions which most other branches of Indian service are sure to obtain. It was a good idea, therefore, to ask the distinguished surgeon to deliver a lecture fitted to meet their wants; and in acceding to their request, Sir Joseph has conferred a signal benefit on an important body of men. We cordially recommend the lecture, which is indeed a *multum in parvo*, to the attention of all who look forward to India as a residence.

Food and Feeding. By Sir HENRY THOMPSON, F.R.C.S., etc. Reprinted from the *Nineteenth Century*, with considerable additions and an Appendix. Pp. 147. London: F. Warne & Co., Bedford Street, Strand.

THIS is a book for the million. It is not strictly scientific, but it is in accordance with accurate scientific knowledge, and thoroughly to be relied on. The subject is one of primary importance in a sanitary and economic, and, we may add, a moral point of view. The laws which regulate health of body and mind are lucidly explained in an interesting manner; lessons in economizing and cooking food to the best advantage are delivered by one who evidently understands the whole subject; and if it be considered how much our temper and our intellect are influenced by a comfortable and satisfied condition of the stomach, no one will say that we went too far in ascribing a moral aspect to the discussion.

The book will be a favourite, we foretell, with every sensible *mater familias* who has long sighed in vain for variety, coupled with economy, in her culinary arrangements; and the most expert professional cook, already fertile in resources, will acknowledge that he or she has found an able adviser in this eminent London surgeon. It is refreshing to find Sir Henry Thompson following the example of Sir Joseph Fayrer, whose excellent little work on the climate of India we recently reviewed, in thus contributing of his medical knowledge and keen observation of modern life to a

subject too much abandoned hitherto to empiricism and mere traditional experience.

The appendix contains much important information, fitted greatly to help in ushering in desirable improvements in the whole style of social entertainments.

Carlsbad, and its Natural Healing Agents, from the Physiological and Therapeutical Point of View. By J. KRAUS, M.D., Consulting Physician at Carlsbad. London: Trübner & Co.: 1880. Pp. 103.

THERE is much point in the saying that "Carlsbad was made for the English." Though laudatory of Carlsbad, it is not complimentary to our nation, implying as it does that our mode of living is such as to favour the occurrence of those diseases which are known to be most readily induced by over-feeding, *i.e.*, the excessive use of animal food two or three times a day, with the usual addition of pastry, sweets, and fatty puddings, and the free use of the stronger wines and beers, such as few Continental people care for or will tolerate. If to these active causes we add town life with its confinement and want of muscular exercise in the open air, and the strain on the mental powers caused by the incessant care and hurry which enslave the most active men in our large cities, we have more than enough of factors of perverted nutrition, and for the production of many of the diseases of the abdominal organs. That these causes are more pronounced and general in England than in any other nation in Europe is certain, and even "that remarkable country America" is left behind, although the increasing number of Americans annually sent to the European spas would indicate that the pace they live at is almost as fertile in its results as in the mother country.

For the many ailments induced by such modes of life the use of the various alkaline saline natural waters is most beneficial, and eminently so if the invalid goes to the waters instead of temporizing by having the waters brought to him. In England the alkaline spas are few, and the waters weak or indifferent; and the climate is such that the invalid cannot utilize even those waters we have by being much in the open air after drinking or bathing without the risk of chills, catarrh, and rheumatism. Last year—1879—for instance, we do not believe there were at any of our spas ten days in which an invalid could sit out in the open air with comfort and safety; while at most of the Continental resorts he could do so, with a few breaks, for three or four months. Having at home neither the climate nor the suitable waters, the invalid who can afford it is obliged to make a long journey, fatiguing enough to one in health, and which, from the way it is often undertaken, is fre-

quently injurious to him. Breaking off abruptly from business, at which he works up to the last hour, he calculates how he can *save* time by taking the most direct route and express trains, gets only half a night's disturbed sleep at the busy hotels he stops at by the way, and arrives a jaded and often a feverish man, bent on rushing to the springs and making the most of them while his time lasts. This type of visitor is well known at most Continental spas, and recurs annually, notwithstanding the strong protests of the local physicians, who, instead of being able at once to apply the *cure*, have often to waste weeks in treating explosions of latent disorders, or acute febrile attacks induced by fatigue and the folly of the patient. From its distance from this country, these remarks apply more forcibly to Carlsbad than to most of the Continental spas; and if their introduction here requires an apology, it will be found in the daily experience of the Carlsbad physicians.

On visiting Carlsbad, and going the round of the springs at the time they are most frequented, one is struck with the large proportion of real invalids: the pale, wearied diabetic, the jaundiced of every hue and intensity, and the victims of adiposis waddling along in the *queue*. Leukerbad, Pfäfers, and Davos have all their crowds of characteristic invalids, but at none—Pfäfers with its weary roll of rheumatics alone excepted—does a first visit produce such a saddened feeling in the visitor. Invalids abound at Aix-la-Chapelle, Wiesbaden, Homburg, and Kissingen, but their number and appearance do not painfully strike the observer; while at Baden-Baden and St Moritz—the former the largest and finest bathing establishment in Europe, the latter, while one of the newest, being, as regards bath appliances, both shabby and uncomfortable—the real invalid is comparatively rare. Carlsbad has been long and justly famed for the cure of two classes of diseases—first, those of the liver, with the relative derangements of the stomach and bowels; and second, diabetes. Like most alkaline saline spas, it has also a good repute in the treatment of gout; while it is a competitor with Kreutznach in the cure of pelvic deposits in women. By many German physicians it is also in special favour in strumous enlargement of the glands, and for the absorption of gouty, rheumatic, and inflammatory joint exudations of recent origin. Though situated in rather a narrow valley, yet, owing to its being 1200 feet above sea-level, Carlsbad, even at midsummer, is not relaxing. But, from the same cause, its climate in spring and early summer and in autumn is liable to sudden change. The mornings and evenings are cool, sometimes cold, requiring care and prudence on the part of the invalid, who, if he follows the custom, turns out to the springs at six in the morning. Our author has given most sensible and necessary directions on these points, and no invalid can disregard them with impunity. Next to Vichy, Carlsbad is the spa most generally resorted to by diabetics. Besides some potash, the water of Vichy contains more

than twice the amount of soda that Carlsbad does. Both are acidulated with carbonic acid, while Vichy wants the sulphate of soda which plays an important part in the action of the Carlsbad water, rendering it, according to the best German authorities, as efficacious in diabetes as the more strongly alkalized water of Vichy. The number of cases of diabetes annually treated at Carlsbad is from 600 to 700. Unless far advanced, or lung disease impending or already declared, almost all cases are *relieved*. The author states that the more distressing symptoms—thirst, restlessness, and polyuria—are diminished within a few *days* of commencing the treatment; while in other diseases the flow of urine is increased. A permanent *cure* of either the grave or mild form of the disease is rare; of the former Dr Kraus mentions only one case of undoubted cure, and that after repeated visits to the spa. The cures in the milder form of the disease are also disappointingly rare; but in many the periodic use of the waters (spring and autumn) secures comfort and fair health for many years (twenty to twenty-five). We observe that our author generally allows some farinaceous food,—a wheaten roll thrice a day, which must be a great treat to those who have been kept on a rigidly anti-diabetic diet,—and he states that he has seen no bad effects from the practice. In Germany, indeed, it is now much more than in this country a general practice to allow farinaceous food freely in the mild form of this disease, regulating the diet so as to suit the general condition and comfort of the patient.

It is in congestive affections of the liver and the cognate or consequent disorders of the alimentary canal that Carlsbad is justly celebrated. Should these, however, depend on or be accompanied by cardiac or pulmonary lesions, no cure is to be expected; and such cases are warned off by the author, as neither the climate nor the water is suitable, and the same remark applies to amyloid and advanced cirrhotic affections.

Cases of enlargement of the liver and spleen resulting from malaria are much benefited by a six weeks' course of the water. The author states that in such cases he has frequently observed a fresh outbreak of the febrile symptoms within a week of commencing the treatment. This is no contraindication to its continuance, however, and the patients frequently remain for long periods free from relapses. Sufferers from gall-stones are often singularly relieved by a course of Carlsbad water. The author speaks most confidently on this subject, and is corroborated by various Continental writers. He states that the water *per se*, even of the hottest spring, has no solvent action on the concretions, he having kept these in jars of the water for long periods without the slightest diminution in weight, or any tendency to break up. Yet the fact remains that patients who for years have suffered from frequent attacks of gall-stones (the diagnosis being established by their appearance in the stools) have passed them while using the water, and have remained

free from subsequent attacks for years. The explanation offered of this is that the laxative effect of the soda sulphate on the bowels and gall-ducts, and the action of the water and soda carbonate on the bile, increase the flow and dilute the consistency of the latter, and so promote nature's cure—the passage of the concretion from the gall-bladder into the bowel—while the restored condition of the liver remains more or less permanent. Such results are very satisfactory; so also are those recorded of the treatment of strumous enlargement of the glands, and of inflammatory pelvic deposits in females. The result in these last Dr Kraus describes concisely as “splendid.”

We have too little space left for an extended notice of the effects of the Carlsbad water in cases of gout and lithiasis. In these the combination of the soda sulphate with the alkaline carbonate seems to be as efficient, and the result more permanent, than is the case with the purely alkaline waters of Vichy or Ems—the saline apparently producing a more lasting effect on the processes of digestion.

Carlsbad possesses a great variety of baths; but the one that attracts an Englishman's notice most is the *moor* bath, to which a large new establishment is entirely devoted. “Moor” baths have come much into vogue of late years. The term *moor* bath does not express their composition or character. The substance “moor” is essentially a form of peat, and is found only in certain districts. It differs from the peat found in Great Britain in being more homogeneous, and containing little of the fibrous matter derived from the roots and stems of plants, resembling somewhat the “vegetable mould” used by gardeners, but more decomposed and consolidated.

In crossing the extensive moors (anglicé) of Bohemia and Bavaria, the traveller is struck with the difference between them and those in our islands. The vegetation consists principally of coarse grasses, and there is an almost total absence of our heather and dwarf bushes. Hence the resulting peat or *moor* is of more uniform character and consistence, and admits of being more readily and thoroughly mixed with water. The *moor* is prepared by saturating it, sometimes for years, with mineral or simple water. Thus prepared, it is conveyed, often for long distances, to the spa, where it is mixed with the water; the process of mixing being not unlike that followed by plasterers in incorporating bullocks' hair with their lime. The quantity of *moor* used for one bath is from 4 to 6 cubic feet, and the temperature of the bath varies from 90° to 100° F. A bath so prepared is suggestive of a *peat-hay*, and looks repulsive and dirty—if, indeed, the latter term can be applied to “matter in the right place.” It is said not to be so generally stimulating as the ordinary spa bath; it is used in neuralgia, especially if associated with rheumatism, and in some of the slighter forms of paralysis associated with contraction of the muscles. We have an impression that there is a great deal of

passing fashion in the use of these baths; and while admiring the large and costly buildings devoted to them at Franzenbad, Kissingen, and Carlsbad, we could not help wondering that among the many hydropathic establishments in Scotland there had never arisen among the managers a genius who could "strike" *moor*, and, taking it at its flow, lead on to fortune. The fundamental principles to be taken into consideration when prescribing Carlsbad waters for internal use are stated thus by our author:—"1st, The cooler springs are only slowly absorbed by the system, while the hotter waters are taken up in a rapid manner. 2d, Patients whose action of the heart has to be watched with care, and whose vital energy will not submit to much stimulation, must partake of the cooler springs. 3d, For acting more energetically we use the hotter springs, if the constitution of the patient will admit of doing so; the particular spring selected is not to be changed without sufficient reason. 4th, The waters, as a rule, are to be taken in the morning before breakfast, as the empty stomach will require less time to absorb the waters. 5th, The quantity for daily use is not to exceed six tumblersful (30 ounces), and it is advisable to begin with two or three, and in many cases even less; only after several days the quantity is to be increased, this depending partly on the individual constitution of the patient and on the respective disease, partly on the effect already obtained or still wished for. 6th, The tumblerful of the water is to be consumed slowly (in 1 to 3 minutes), a pause of twenty minutes or more being made between each tumbler, according to the state of the patient's digestion, and moderate walking should be resorted to during this time. 7th, After finishing the last tumblerful, the patients ought to walk about till they feel hungry for breakfast, which generally will be the case in about one hour's time."

We have to thank the author, who knows our language and our ways well, for having given us his excellent work in an English dress, a compliment seldom paid us by our Gallic neighbours. The work is free from egotism; and while the claims of Carlsbad are fairly stated, Dr Kraus neither magnifies them nor his office by depreciating those of other spas. His descriptions of the various diseases for which the waters are suitable are concise and clear, and will enable the English physician to weigh the pros and cons before deciding where to send his patient, and also furnish him with the cautions necessary for the patient's guidance and safety.

Should any of our readers be induced to visit Carlsbad during their holiday, so as to convert their literary into actual knowledge, they will find in Dr Kraus a most intelligent confrère and an agreeable guide and counsellor.

The Art of Washing. By A. A. STRANGE BUTSON. London: Griffith and Farran: 1880.

WE have read this little book with much satisfaction, and we strongly recommend it to all, both in the profession and out of it. The book is well got up and handy; the references to hygienic and sanitary points are good and most important; at the same time, the authoress's style is very entertaining, while conveying much useful information.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LIX.—MEETING VIII.

Wednesday, 2d June 1880.—Dr P. HERON WATSON, *President, in the Chair.*

1. *Dr Cotterill* exhibited the following specimens occurring in Mr Annandale's practice:—1. MEDULLARY CANCER OF TESTICLE. The specimen, weighing $7\frac{1}{2}$ pounds when fresh, was removed from Mr R., aged 45. Patient had been married eleven years, and in that time had a family of nine children. His right testicle had never descended from the abdomen. His father had the same abnormality. Two years ago he had noticed enlargement of the organ, which had gradually progressed until its removal in May of this year. At that time it hung down to his knee, and he had to wear a suspensory apparatus. In this instance the undescended testicle was of no service, as when the disease attacked the left testicle he ceased to have sexual desire. There was no pain in the affected part in the course of the disease. The cord was apparently healthy, and he has made a good recovery. 2. EPITHELIOMA OF HAND. Amputation through the forearm had been performed in this instance in a patient aged 81, who made a good recovery in spite of his age and a very degenerated state of his bloodvessels. 3. HÆMATOCELE. Portion of the sac shown. This case was originally one of hydrocele, which, after being tapped several times without permanent success, had been injected with iodine. The inflammatory enlargement due to this had never subsided, and the tumour was accordingly excised with the testicle, which was atrophied and firmly adherent to the wall of the sac. Good recovery. 4. FEMORAL HERNIA. A case in which the hernia had in part become irreducible by strong adhesions of omentum to sac. The frequent descent of abdominal contents, with the attendant discomfort and risk of strangulation, necessitated

the removal of the omentum and sac, which was ligatured at its neck and stitched to the surrounding tissues. The patient has made a good recovery. 5. ENCHONDROMA OF SCAPULA, occurring in a girl of 22. It was of three years' growth, and was attached to the vertebral border of the scapula on its under surface, just below the spine. It caused considerable pain and deformity, and the thick structures covering it had given rise to some difficulty in making out its exact nature, size, and attachments. It was removed by a V-shaped incision along the upper and vertebral borders of the scapula. The patient has made a good recovery. 6. MALIGNANT DISEASE OF TIBIA, occurring in a patient of 15. Amputation performed just above the condyles of the femur. Wound healed without any suppuration. All the above cases were treated antiseptically. 7. FRACTURE OF SKULL. The brain shown, with a very considerable flattening of the anterior part of the left hemisphere, due to compression by a large clot. When first under notice the patient was suffering simply from the symptoms of concussion, but in two or three hours the signs of compression came on, and he died the following day.

II. *Dr Allan Jamieson* exhibited a TOE NAIL which he had removed the day before from the great toe of a lady, an example of onychogryphosis. The lady had been in the habit of picking out the epidermic accumulations from beneath the nail, and found that it by degrees became more and more separated from its bed, and more horny in character, so that at length it was impossible to cut it. In structure and appearance it exactly resembled a small curved horn. It was removed by evulsion, and came easily away, with scarcely any bleeding. It used to be taught that the nail increased in length by additions made from its matrix or posterior attached portion, in thickness by additions made to it from below from the vascular bed on which it rests, and to which in health it is firmly attached. Mr Hutchinson, however, had recently pointed out that no increase in thickness takes place, as the nail in its growth travels over its bed,—it merely becomes denser and more solid; and this case might be cited as proof of this. The nail here was entirely raised from its bed, which had become atrophied and anæmic. Yet a nail many times thicker than normal grew from the matrix, to which alone it remained connected.

III. *Dr Fraser* then read his paper on A CASE OF MALIGNANT DISEASE (SARCOMA) OF THE LUNG, which will appear in a future number of this Journal.

Professor Sanders said that such cases were sufficiently rare and difficult in diagnosis to make such a careful and well-reasoned description as this is most valuable. He related points in other cases in his own experience.

After a few remarks from *Professor G. Stewart*,

Dr Coldstream said that in some points *Professor Fraser's* case

was similar to one he showed to the Society two months ago, where a malignant tumour involved the root of the left lung, compressing the lung outwards and backwards. The symptoms were those of a large serous effusion into the left pleural cavity. Dyspnoea was in this case an urgent symptom, whereas it was absent in Professor Fraser's patient.

Dr Byrom Bramwell expressed the pleasure with which he had listened to Professor Fraser's paper. He thought that, provided the case was fully and accurately examined, there was seldom any difficulty in making a diagnosis between an uncomplicated pleuritic effusion on the one hand and an uncomplicated intra-thoracic cancer on the other. Where both conditions were combined in the same patient the diagnosis was sometimes impossible without puncture. He referred to the differential diagnosis of intra-thoracic tumour and intra-thoracic aneurism, and alluded to the case which Professor Sanders had mentioned. That case had first come under his notice as a dispensary patient, and he had afterwards, through Professor Sanders's kindness, had frequent opportunities of examining it in the wards.

IV. *Dr Dunsmure* then read a paper on TEMPORARY LOSS OF VOLUNTARY POWER PRODUCED BY A TOUCH ON THE HEAD.

Professor T. G. Stewart having spoken on the subject of the paper,

Dr Byrom Bramwell remarked on the interest of the case, and referred to the rarity of paralysis after the convulsions of "idiopathic" or "genuine" epilepsy. As every one knew, epileptiform paralysis very frequently followed the partial convulsions (Jacksonian epilepsy) which resulted from the presence of a critical lesion in the motor area, but in *Dr Dunsmure's* case there were no signs of any gross lesion. He asked whether Professor Grainger Stewart, or other members of the Society whose experience in epilepsy was large, had ever met with temporary epileptiform paralysis in genuine epilepsy.

Dr Brakenridge said it should be borne in mind that epilepsy is often little more than a symptom of disease. There were many facts in this case which pointed to the possible presence of a very chronic irritative—but not destructive—lesion of the cortex cerebri in the motor area, with some modification of the implicated nerve substance. He referred to the case of a woman recently under his care in the Royal Infirmary, in whom unilateral epileptiform convulsive seizures, followed by paralysis, affecting first the leg and then the arm, led to the diagnosis, confirmed by post-mortem examination, of a tumour of the brain in the ascending convolutions, at the upper part of the fissure of Rolando. In this case an ophthalmoscopic examination was made, but no optic neuritis was discovered. *Dr Dunsmure's* case was an exceptionally interesting one, and with a view to discovering its true nature and the seat of

any possible lesion, he thought it would be well if Dr Dunsmure could ascertain:—1st, In which limb, and in what muscle or groups of muscles, the epileptiform spasms commence; 2d, The order in which these muscles or groups of muscles are successively invaded; 3d, If this order is invariable; 4th, The muscles or groups of muscles which remain paralysed, the degree in which they are paralysed respectively, and the order in which the paralysis disappears; 5th, Whether or not sensibility is affected.

Professor Anandale referred to the experiments of Brown-Sequard, and to the epileptic guinea-pigs shown by this distinguished observer.

Mr Hamilton asked Dr Dunsmure whether a mere touch of the scalp was necessary in order to produce the symptoms, or whether it was necessary to employ any pressure; and also whether ossification of the bones of the skull was complete. If ossification was incomplete, and if any amount of force was required, then the phenomena might be explained by alterations in the cerebro-spinal fluid. Duret's experiments on concussion have demonstrated that it is to compression of the cerebro-spinal fluid by temporary depression of the skull that the concussion symptoms are due.

Dr G. Stewart again offered some remarks, after which

Dr Argyll Robertson stated that he had, through the kindness of Dr Dunsmure, the opportunity of examining the boy's eyes that day, and that on ophthalmoscopic examination he had found the interior of both eyes perfectly normal. From the length of time the disease had existed with comparatively little increase in the severity of the symptoms, and from the absence of optic neuritis, he was inclined to believe there was no "gross" intracranial disease in his case.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XXXIX.—MEETING X.

Wednesday, 28th April.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Dr Bruce* showed an EARLY ABORTION, consisting of a small pear-shaped body about the size of a pea. The patient had not menstruated for three months, and then flooded. The minute organism they saw, and about a teaspoonful of liquor amnii, were all he had to show for this apparently three months' gestation.

II. *Professor Simpson* showed an Albert Smith PESSARY, made of an elegant new material—colluloid. The advantages claimed for it were its smoothness, elegance, and its softening in hot water. In this way it could be moulded to any shape and made to retain this by immersion in cold water. Vulcanite pessaries, of course, when dipped in oil, could be moulded over a gas jet, but there was

great risk of cracking them during this process. The only drawback to this material was, that it was somewhat costly. It had been shown him while in Paris by Dr Le Blonde.

Dr George Dickson said the celluloid was a mixture of tissue paper and camphor chemically treated. It was now being used for a great many purposes, piano keys, etc.

III. *Dr Foulis* then read a paper on SOME OF THE USES OF TURPENTINE, which appears at p. 131 of this Journal.

Dr Simpson said that they had been more than once indebted to Dr Foulis for papers on researches which had made his name famous. He was glad to hear him to-night on a practical point, giving observations both original and scientific. Dr Keith's paper had drawn their attention to turpentine. He himself had learned its value from Dr Sidey, who had got it from Dr Foulis. Since then he had constantly used it. Even when the odour of one's fingers was not dangerous to patients, it was right to employ it. It was specially valuable after examination in cancer cases. Formerly he washed his hands in vinegar, a practice he learned from Virchow. He believed vinegar to be better than carbolic acid, Condy's fluid, and other well-known disinfectants. It was an acid, and dissolved matters better than mere watery solutions. Vinegar was also useful as an application in pityriasis, as Dr James Ritchie had shown. In his ward and consulting-room he always employed turpentine. One great advantage of it was that it could be easily got. In regard to the employment of Chian turpentine in cancer, as recommended by Clay of Birmingham, he had used it in two cases without the slightest benefit.

Dr James Carmichael was at first in doubt if Dr Foulis's paper, from its title, was suited to be read before an obstetrical society. Having heard the paper, however, he considered that it was really valuable to obstetricians, as no class of practitioners needed a ready and thorough disinfectant so much as the obstetrician. He had often noticed how difficult it was to free one's hands from some odours. As to Dr Foulis's statement that turpentine had not been hitherto used as a parasiticide, he wished to point out that it had long been employed as an anthelmintic. He had listened with great pleasure to Dr Foulis's paper.

Dr Bruce thought Dr Foulis had done good service in bringing the local uses of turpentine so prominently before them. One disadvantage of it was its strong smell. Carbolic oil was a good disinfectant, and thymol soap was very good. In a recent case, where he had to draw off a patient's water, he found thymol soap very useful in removing an unpleasant smell.

Dr Craig had listened with great pleasure to Dr Foulis's paper. Turpentine was erroneously termed spirit of turpentine. It was really a volatile oil. Dr Foulis had done great service in bringing its local uses before them. Dr Warburton Begbie had directed

attention to its use as an internal antiseptic in fetid bronchitis and gangrene of the lung. Nothing was so good in such affections as turpentine. It has, of course, long been known as an anthelmintic. He was interested in Dr Simpson's remarks on Chian turpentine in cancer. It should be remembered, however, that much that was sold as Chian turpentine was spurious.

Dr Rattray had listened with very great pleasure to Dr Foulis's communication, although, when he saw it in the billet, he thought, like Dr Carmichael, that it was hardly suitable for their Society. He, of course, remembered Dr Begbie's paper on turpentine, although he had not been able to lay his hands on it. Dr Rattray had found it useful in giddiness. In fact, in two cases specially it had acted like a charm. The first was that of a fat lady, where vinegar had been tried and failed; turpentine helped her in walking. The second was that of a gentleman from India, with fulness in the head, where turpentine did well. He was obliged for the hint as to the use of turpentine in post-mortems. He had generally found the ordinary antiseptics fail. For ring-worm, croton oil had been recommended, but he felt rather inclined to try turpentine. He generally employs nitrate of silver (20 gr. to ℥i.).

Dr James Young asked Dr Foulis's opinion as to the value of terebene.

Dr George Dickson had found turpentine very useful, when sprinkled on floors, in destroying drain smells. For cleansing the hands there was nothing so good as lard, turpentine, and soap. Turpentine and soapy water was excellent for killing lice; and its use in dogs infested with fleas was well known.

The President had much pleasure in homologating the laudatory terms with which Dr Foulis's paper had been received. The answer to Dr Bruce's objection was that the smell of turpentine was really pleasant instead of disagreeable. It was due to Dr Foulis that he should bring forward his claim to the introduction of turpentine as an antiseptic for the hands in dealing with putrid matters, as he (Dr M.) till lately thought they owed it, among other things of great value, to Dr Thos Keith. Since Keith's paper on ovariectomy was published he had used turpentine persistently at home, in the Royal Infirmary, and in the Maternity Hospital, and was greatly pleased with it. He was indebted to Dr Foulis for his valuable hints as to the best methods of employing turpentine as a disinfectant. As to Chian turpentine, he believed that what was supplied in the Infirmary was genuine; at any rate, he understood that every precaution had been taken by the dispenser to make sure that we were getting the genuine article. He had tried it, and with no better success than Dr Simpson. The pills were not trustworthy, as they pass through the bowels without being absorbed. Since Dr Foulis had told him of the value of turpentine in ring-worm, he had used it once, and

would give the result afterwards. Its employment in this provoking skin disease, if found useful, would form a valuable addition to pædiatrics.

Dr Foulis thanked the Fellows for the kind reception accorded to his paper. He had given it the special title, as he wished to state his opinion only on its local use. In the *United States Dispensatory* a full account would be found of all the uses of turpentine. He had spoken of its use, not as an antiseptic, but as a disinfectant. When one touched putrid material, their rough skins absorbed fatty, degenerated, stinking matter. He had brought forward turpentine as a means of removing this. Soap was good too, but it did not free the hands from odour. Turpentine should be used first, and then soap. He did not claim any priority in the use of turpentine as a parasiticide, nor did he intend to discuss its medical uses. Its use might cause erythema if it was not washed off in two or three minutes. He generally washed it off with soap and water when it caused tingling. He had used it in seventeen cases of ring-worm. Nitrate of silver stained the scalp. He had no experience in the use of terebene. Professor Fraser was employing it in a case of favus with a good result.

IV. *Dr Hart* then read his paper on the ALLEGED SYNCLITIC MOVEMENT OF THE FOETAL HEAD IN LABOUR, which appeared at page 27 of this Journal.

Dr Macdonald had listened with great pleasure to the paper, which had all the incisive character and scientific accuracy of *Dr Hart's* communications. He agreed with his conclusions in most points. *Dr Matthews Duncan* had thoroughly refuted *Kunke's* theory, and *Dr Hart* had conclusively refuted the later paper of *Hodge* on the subject. It was undoubtedly true that synclitism of the foetal head throughout the whole of its course through the pelvis was improbable theoretically, and also impossible to demonstrate. He could not agree with *Dr Hart* as to the absence of foetal axis pressure. He believed that in considering the uterine forces we had to regard the action of more than mere fluid pressure. He was convinced that in the second stage, and in the first stage when there was little fluid, the rigid bar formed by the spinal column of the child helped to guide the head. Great credit was, at the same time, due to *Dr Lahs*, *Dr Simpson*, and *Dr Hart* for insisting on the importance of the girdle of contact and its guiding angles as regulating the movements of the head. He was exceedingly interested in the moulded head shown.

Professor Simpson was much of the mind of the President in thinking that the subject of synclitism had been well brought before them. He was not quite sure that they should absolutely reject a theoretical levelling in easy labours. It was quite clear,

however, that in a difficult labour all the conditions were against it. Even when the head was small and the pelvis roomy, it was an ideal movement of which they had no clinical proof. It was not an essential point in the description of the progress of the head, and he agreed that it should be kept out of consideration.

SESSION XXXIX.—MEETING XI.

Wednesday, 26th May 1880.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Professor Simpson* showed (1.) A FIBROUS POLYPUS he had recently removed from a patient. It had been born out of the uterus, and was thinning the cervix just as the foetal does in the first stage of a primiparous labour. After the patient was chloroformed he divided the cervix with scissors on the right and left sides up to the vaginal junction. The tumour was then seized with a volsella and drawn partially down. With the nail-curette he had previously shown to the Society he then detached its pedicle. (2.) A FETUS with well-marked oedema. There was fluid in all the serous cavities, and some peritonitis. In a former pregnancy the placenta alone was oedematous. He owed the preparation to the kindness of Dr Groves of Trinity.

II. *Dr James Young* showed a BATTLEDORE PLACENTA.

III. *Dr Underhill* then read a communication on MEASLES IN RELATION TO PREGNANCY AND PARTURITION. In this paper, after alluding to the rarity of this complication, the author gave some details of eighteen cases which he had collected from various sources. Seven of the cases had occurred during pregnancy, and eleven either at the end of pregnancy or during the lying-in period. In three of the cases the result, as regards the mother, could not be obtained. Of the seven who were attacked during pregnancy, two recovered and went on to the full time; of the five who miscarried two died, two recovered, and in the remaining case the issue is not given. Of the eleven who form the second group, five recovered, four died, and in two the result is not mentioned. Among those who recovered, the delivery took place in two cases on the second day of the disease, in two on the fourth day of the disease, and in the fifth during the eruptive stage. Among those who died, one died during the eruptive stage, a second was delivered during the same stage, and how long she survived is not given: the two others were attacked each on the fourth day after confinement, and died, one three days, the other eighteen days, later. The data are not sufficiently numerous or accurate to found any safe conclusions upon, further than that measles is an exceedingly serious and frequently fatal complication both of pregnancy and the parturient state, and as such is to be

most carefully guarded against by women in either of these conditions, if unprotected by a previous attack of the disease.

Professor Simpson had listened with pleasure to Dr Underhill's communication. The liability of pregnant females to zymotic diseases was of great interest, and an important one for consideration. Dr Underhill had expressed the relation of pregnancy and parturition to measles correctly. The communicability of measles to the pregnant woman was not so intense as that of smallpox and scarlet fever, because the measles poison was very common, and almost every one suffered from it. Thus few pregnant women are attacked with it. It was important to know, however, if they had suffered from it. Even if they said they had never been affected with it, it was quite possible they had forgotten the fact or not been aware of it. He remembered Sir James Simpson's case well. The lady had been carefully protected from it when a child, so that she ultimately took it when pregnant, and died. The only other case he had known was in the Maternity, and the woman made a good recovery. Dr Underhill's paper had confirmed his previous opinions on the relation of measles to pregnancy and parturition.

Dr Keiller could not remember any case fatal from the occurrence of measles during pregnancy. It was important, however, to guard pregnant or puerperal women from the poison. He thought patients suffering from fevers should be removed to hospitals more frequently than they were. He had never seen any bad results to the patient from such removal.

Dr J. Carmichael had always, if possible, removed his patients under such circumstances.

Dr Bruce thought that they would have had a better discussion if the paper had taken up the relations of scarlet fever to puerperal fever. He had seen cases of puerperal scarlet fever, and was inclined to think that in the great majority of cases it was not the same as ordinary infectious scarlet fever. He had met with one case of measles in pregnancy where the patient progressed favourably for some days, when high fever arose, temperature rising to 103° F., ushering in an attack of broncho-pneumonia. Labour came on, and the child was born alive, but died a few hours afterwards. The mother ultimately recovered. This case corroborated Dr Underhill's statement that measles is not so dangerous when the mother aborts after the eruption. He had seen four cases of smallpox during pregnancy; three of the mothers died, and one recovered. According to his experience, children under three months seldom take measles.

Dr Wilson felt indebted to Dr Underhill for his interesting communication. He had no experience of measles in pregnancy, but had seen instances of relapsing fever, scarlet fever, and smallpox occurring during it. He thought it of little use to remove patients with measles, as it was communicable before the eruption

appeared. Children under six months were not liable to it, and accordingly Dr Underhill's statement that no age was exempt should be qualified.

The President had had no personal experience of measles during pregnancy or parturition; but he believed Dr Underhill's views to be correct. At present he was expecting to be shortly called to attend the confinement of a lady who had measles in her family in March last. She was sent to Keswick to be out of the way of infection, but came back in a fortnight and took measles, with high fever and persistent vomiting for twenty-four hours, as the physician in attendance informed him. She had certainly not had measles before. As to the question of the frequent mistakes made in the diagnosis of measles in very young children, he might mention that only three days ago he saw a child, a month old, with a measly rash, but not measles, which was believed by its nurses to have true measles. In reference to the further question that very young children were less liable to the exanthemata than other patients, he could remember that he had seen a child sucking its mother, who was scaling from scarlet fever, but yet did not take it. The mortality results in measles during pregnancy were alarming, and warranted most strict measures in isolating patients. He had listened with great pleasure to Dr Underhill's paper.

Dr Underhill thanked the Fellows for the reception accorded to his paper. He wished he had had more details on the subject. He was aware of the fact that children under one year were far less liable to measles than older children, but such cases did occasionally occur.

IV. *Dr Keiller* then read his paper on a case of DEATH FROM UMBILICAL HÆMORRHAGE.

Professor Simpson was interested in Dr Keiller's case. Such a case was rare, but it was important that it should be recorded. The pathology was obscure, and thus every case with a post-mortem was important. He had seen two instances. It was alleged that the administration of alkalis to the mother gives a tendency. In one recent case that had come under his notice, where the child died two weeks after its birth, the mother had taken chlorate of potash during her pregnancy.

The President had never had a fatal case of hæmorrhage from the cord, either secondary or primary. He doubted whether the saving of placental blood for the fœtus could have any deleterious effect on its liver, as had been suggested in one of the authorities cited by Dr Churchill.

Part Fourth.

PERISCOPE.

MONTHLY RETROSPECT OF OBSTETRICS AND GYNÆCOLOGY

By ANGUS MACDONALD, M.D.

THE PAPER ON DIAGNOSIS AND TREATMENT OF OBSTETRIC CASES BY EXTERNAL EXAMINATION AND MANIPULATION, by Dr Paul F. Mundé of New York, is concluded in the *American Journal of Obstetrics*, April number (1880), and, as published separately, forms a handsome volume. In the portion of the work before us the author enumerates the various purposes for which external manipulations are employed in the treatment of obstetric cases—(a), the rectification of an existing malposition, or the conversion of one presentation into another more desirable one (transverse into head or breech, breech into head, or face into vertex); (b), the expression of the fœtus; (c) the expression of the placenta. 1. The operation of external version is so much to be preferred, in the interests of the mother, to an internal operation, that Dr Mundé considers some plan should be devised to popularize its employment. The chief barrier to its becoming generally adopted is the lack of dexterity of the practitioner in detecting abnormal presentation by palpation prior to rupture of the bag of membranes, the operation being, as a rule, inapplicable after the waters have escaped. Still it has occasionally succeeded after rupture of the membranes, and should always be tried when the uterine walls are lax. Practically, cephalic version alone should be advised whenever external version is feasible, because we wish to bring about a normal position and a natural labour, there being no necessity for hastening the labour. It is applicable to transverse presentation discovered during the last month of pregnancy before rupture of membranes, or after that period provided the child is but loosely grasped by the uterus. [In what proportion do such mal-presentations persist till delivery?—A. M.] Some have recommended conversion of every breech into a head presentation by external version, as the risks to both child and mother are thereby greatly diminished. A contraindication to this measure, however, is the necessity for a rapid termination of labour from any cause. The operation is conducted in the intervals between the pains. During the pains the hands hold the two fetal antipodes firmly fixed in whatever position they may have been caused to assume. With one hand over the breech, the other over the head of the fœtus, pressure is exerted to push them in the direction of the desired position. This pressure is maintained until either the method is proved to have failed or

until the head has gained the inlet to the pelvis, and the position has been secured by uterine contraction. Podalic version by external manipulation can be indicated only where the inferior extremity of the child is lower than the head, and some complication, such as placenta prævia, necessitating rapid delivery, is present. Conversion of a face into a vertex presentation, if the operation is free from risk, is obviously, from a comparison of statistics, a highly advantageous procedure. The occiput may be made to assume the position of the face by the hand in the vagina pushing up the chin and then rapidly grasping and dragging down the occiput; but the same end may be accomplished, free from the same danger, by purely external manipulation. The operator first, in the interval of a pain, seizes the breast and shoulders and pushes them backwards (referring to the child's position) and upwards, bringing the shoulders into an axis with the trunk and head. Then the pressure is exerted no longer upwards, but only backwards, while the other hand, grasping the breech, pushes it forwards. Thus the shoulders and chest of the child come to be in an axis posterior to the rest of its body, and this position necessitates a lowering of the occiput to occupy the brim of the pelvis. *B.* Expression of the fetus is a mode of delivery which was well known to the ancients, and is more or less still made use of in probably the majority of labours in the modified form of friction. It attains its object in two ways:—1st, Direct compression of the uterine cavity; and 2d, excitation of uterine contractions. The advantages claimed for the method by Kristeller are—1. It shortens the duration of labour. 2. The normal position of the child is preserved. 3. The application of forceps is frequently rendered unnecessary. 4. It thereby saves the perineum. 5. It often facilitates necessary forceps delivery. 6. It prevents upward extension of the arms in breech delivery. 7. It hastens delivery of the shoulders after birth of the head. Conditions for the method are — a vertical position of the child, the absence of any inflammatory affection or hyperæsthesia of abdomen, no sign of twin pregnancy, a normally shaped pelvis, dilated os, ruptured membranes, and a low position of the presenting part. The method is indicated when labour pains are weak or deficient. When there are but two other means left to the medical attendant, the production of a *vis a tergo* by internal oxytocics and a *vis a fronte* by forceps. The method is of vastly more value in breech than in head presentations, when the breech becomes impacted in the pelvis in such a manner that extraction by fingers or instruments is a matter of great difficulty. Expression, as an aid to delivery by manual extraction in the head-last cases, is a measure of the greatest utility and importance, and may enable us to avoid forceps, and save the life of the child at a critical period when its cord (*see*) is being compressed between the impacted head and the pelvic brim. Expression *a tergo* in forceps cases is in conformity with the rule in forceps delivery, that traction be used only during a pain, and in the

absence of pain abdominal pressure may be used as a substitute. *C.* Expression of the placenta, or what is now generally known as Credé's method, has various modifications; that which the author practises is similar to the one recommended by Spiegelberg. Dr Mundé found, even after matured experience, that cases were to be met with in which one hand alone, and sometimes both hands, failed to express the placenta, whether from the uterus or from the vagina, into the external world. It is easily ascertained by the palpating hand whether the placenta has or has not left the uterine cavity. In the former case, gentle, careful traction on the cord is considered entirely safe, and decidedly effectual in securing its removal. In the latter case, prolonged gentle friction of the uterus will effect detachment of the placenta from its walls when forcible expression has failed.

THE DISEASES OF THE EYE OCCURRING IN CONNEXION WITH PREGNANCY is the subject of an article by Dr Henry Power, of London, in the *Lancet*, May 8th and 15th, 1880. After a brief survey of the various alterations which take place in the different systems of the body coincident with pregnancy, and which directly or indirectly predispose to pathological states, the author proceeds to classify the diseases of the eye which occur in connexion with pregnancy under the following heads:—1st, Affections depending on general anæmia and exhaustion; 2d, Affections consequent on some special lesion of the nervous system; 3d, Affections depending upon, or rather associated with, albuminuria. In the first group are included ulcers and severe inflammations of the cornea, which may arise spontaneously or from slight injury in women exhausted by pregnancy or lactation. Impairment of the power of accommodation, due to defective power of the ciliary muscle, may also frequently be noticed in pregnancy as a result of exhaustion. In all of these conditions, rest, nutrient and tonic treatment are recommended. Obstruction of the canaliculi, lacrymal sac, or nasal duct is apt to end in the pregnant woman in inflammation and abscess. Dr Power has thought that he could trace a connexion between frequent pregnancies and the development of cataract in cases of women of somewhat feeble constitution. Of the affections depending on lesion of the nervous system, implicating the nervous apparatus of the eye, two divisions may be considered, namely, the intraocular and extraocular affections. The former are almost limited to cases of albuminuria, yet cases of hæmorrhagic glaucoma, as well as miliary hæmorrhages, have been recorded, unconnected with albuminuria in pregnancy. In albuminuric cases the physical changes observed by aid of the ophthalmoscope are cloudiness of the media, probably from effusion into the vitreous, and those changes characteristic of albuminuric retinitis (engorgement of the veins), optic neuritis, or peripapillary serous infiltration, hæmorrhages, and exudations. It is noticed that, whatever be the cause of the albuminuria, the vision

is not necessarily impaired because the urine is albuminous, and again that the physical changes observed in the retina in albuminuria may sometimes be present in pregnant women without albumen being present in the urine, although its absence may, perhaps, be only temporary. The prognosis of hæmorrhage on or in the retina must depend essentially on their cause. If the albuminuria is due to kidney disease, which has only been intensified by the supervention of pregnancy, puerperal eclampsia and a fatal issue may be anticipated; but if the albuminuria be functional, or due to pressure on the ureters, a favourable forecast may be given. Hæmorrhage on the retina, even of somewhat large size, may disappear, and white spots are probably also absorbed, though more slowly than the hæmorrhages. In regard to intra-cranial disease, as occurring in pregnancy, the writer states that a sudden loss of a large quantity of blood in delivery has been known to produce partial or complete loss of vision, probably due, he thinks, to the sudden withdrawal of blood from the system causing the vessels of certain parts of the brain to contract so firmly that the circulation is never again restored through them. The diseases of the eye resulting from such conditions must be classed as anomalous affections, in which we are unable to localize the disease, and can only resort to speculation in regard to their explanation.

TOTAL EXTIRPATION OF THE UTERUS FROM THE VAGINA is the title of a paper by Kaltenbach in the *Centralblatt für Gynäkologie*, No. 11, for 1880. The patient was 57 years old, had ceased to menstruate for five years, and had suffered from uterine prolapse for twenty-four years. All sorts of means adopted to restrain the prolapse had failed. In February of the present year she applied to Dr Kaltenbach for the relief of urinary and other persistent trouble occasioned by the persistent prolapse. The uterus, vagina, and bladder were completely external. The sound passed five inches into the uterus. The anterior and a portion of the posterior lip were occupied by well-defined, copiously secreting ulcerated surface. The patient readily agreed to the proposition of an operation for radical cure. The original intention was to remove the ulcerated cervix along with its vaginal attachment. For this purpose a ligature was passed on each side so as to include the uterine arteries, and a portion of the neck about 2-2½ inches long was dissected out. In executing this manœuvre, however, the operator went too far, and opened into the peritoneum high up posteriorly. This accident suggested to him the total extirpation of the uterus. He accordingly passed two fingers through the rent and pulled the uterus down through the peritoneal opening without trouble. The uterus now hung isolated, attached only laterally by the somewhat twisted broad ligaments, and anteriorly to the bladder by the peritoneal reflection. The two ligaments were now ligatured, each in three portions, and inside the ligature

the uterus was separated by a stroke of the knife. The plica vesico-uterina was seized by small forceps on both sides and cut through in front of these. Although the cords in the broad ligaments were very firmly tied, the middle ligature on the right side was seen to be defective. The corresponding part of the broad ligament became retracted, and there resulted considerable hæmorrhage. By opening out the forceps fixed in the peritoneal wound edge, the bleeding part was easily exposed and definitely secured. Care was now taken, by introduction of small pieces of sponge fixed in holders, to make sure that no blood had entered the peritoneal cavity. The peritoneal wound was now closed up by six silken sutures, left long, and which at the same time fastened the ligatured portions of the broad ligaments in an extra-peritoneal position. In order to hasten the arrest of hæmorrhage the lateral portions of the vagina were brought together with deep sutures, leaving only the central part of its lumen open. The inverted vagina, only now about one-third its original length, was covered with thymole wool and kept in position by a T bandage. The operation was completely successful. The ligatured portion of the broad ligaments and a portion of the vaginal wound sloughed off. The prolapsed vagina became spontaneously replaced on the fourteenth day. After four weeks the opening in the vagina was completely closed by a smooth cicatrix. After the woman began to walk about the vagina again prolapsed. This inversion was, however, on the 20th March, cured by a kolpo-perineoraphe, which was executed at a single sitting. The author proceeds to suggest that this operation may ultimately find wider applications, so as to replace other more serious measures suggested for the cure of severe prolapse, complicated or uncomplicated. The advantage which he claims for the operation are the elevated situation of the opening into Douglas's space, the shutting up the peritoneal wound by means of suture, and the retention externally of the ligatured stumps of the broad ligaments. By the former arrangement the danger of opening the bladder or including the ureters in the ligatures are obviated. By the second arrangement it is possible to apply antiseptic measures to the extra-peritoneal wound; and by the third a free exit is allowed for the ligatures and any necrobiotic structures that are separated from the vaginal wound while it is healing.

A CONTRIBUTION TO THE OPERATIVE AND AFTER TREATMENT OF AMPUTATION OF THE SUPRAVAGINAL UTERUS IN FIBROMA, by Dr Dorff, Assistant-Physician to the Gynæcological Clinique in Freiburg, is contained in No. 12 *Centralblatt für Gynäkologie* of current year. It gives an account of eight cases in succession in which, by Hegar or by Kaltenbach, the uterus had been removed on account of fibroid tumours, all of which were successful, and all had been treated since August 1879. The author objects to Pean's extra-

peritoneal method as hitherto practised, on two grounds: first, that it is usually not, or at least not completely, extra-peritoneal. Only when the cervix is very mobile or very long does it permit of being so far drawn out as that the ligatures lie in front of the abdominal wall. In other cases they lie between the edges of the abdominal incision, and even in the peritoneal cavity, beneath the serous membrane. The second objection to the Pean method is the usually rapid onset of decomposition in the stump, and the great difficulty of keeping it antiseptic. To avoid the first difficulty Hegar stitches the peritoneum close to the stump below the ligatured point, so that the stump comes to project free from the bottom of a short conical or funnel-shaped cavity, the sides of which are formed by the thickness of the abdominal wall, and communication with the peritoneal cavity is completely shut off. To avoid sepsis in the stump, Hegar, partly by experiment on animals, partly by observation of operation cases, has arrived at the result that the stump can only be kept securely aseptic by dryness and keeping away of every kind of moisture. This end is effected in these operations, firstly, by the most careful arrest of bleeding in the abdominal incision; secondly, the stump itself, on its cut surface and on its peripheral aspect, is cauterized as deeply as possible with Paquelin's cautery. Then the edge of the abdominal incision on the lateral walls of the funnel-shaped cavity is painted over with a 10 p.c. solution of chloride of zinc, the excess of solution being carefully dried up, immediately after the painting, with small balls of cotton wool. The bottom of the funnel is avoided in this process, and a weaker solution employed for it. Small rolls of absorbent wool, which have been steeped in a weak chloride of zinc solution (1-2 p.c.) and then dried, are pushed between the stump and the edge of the wound, and the cavity thus carefully filled. The rest of the dressing must be so arranged that one may examine the stump and surroundings at any time without disturbing the dressing. If the rolls of cotton wool are moistened with blood or wound fluid, we may be sure that decomposition is setting in rapidly. The unpleasantness in this treatment is the sloughing off of the edges of the abdominal wound and its surroundings. This slough begins to come away from the 6th to the 7th day. Hegar and Kaltenbach have not seen any bad results from it. After the 5th or 6th day the chief dangers are over. These operators do not now employ Pean's ligature, but the elastic ligatures recommended by Kleeberg in Odessa for fibroma operations. A short account of the eight cases is then given.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

HYDRATE OF CHLORAL IN GONORRHOEA.—We notice in *Allgem. Med. Central. Zeitung*, 24th April 1880, that Dr Pasqua has found acute gonorrhœa to yield rapidly to the following treatment:—

℞ Chloral hydratis, gr. xxiv.
Aquæ rosæ, ℥iv.

Sig. To be injected twice daily into the urethra, and retained for a couple of minutes.—*Philadelphia Medical and Surgical Reporter*, 5th June 1880.

CHIAN TURPENTINE IN CANCER.—As the treatment of cancer by this turpentine during the last few weeks has been a subject of great public interest, I send our experience of its administration at this hospital, where it has been extensively used in a variety of cases of cancer of the uterus, breast, tongue, etc., but up to the present time, I am sorry to say, without benefit in any instance. A number of samples of the drug have been submitted to us, of which two only accurately answer Mr Clay's tests, all the others being more or less impure. Two patients suffered less pain for a day or so, and one thought a tumour in her breast was less, but the relief was not maintained, and the tumour has not really diminished. Singularly enough, these patients (among the earlier treated) were taking an impure sample of the drug. As far as time will allow us to judge, the opinion of myself and colleagues is that the Chian turpentine does not possess the power of either curing or arresting cancer. We are still using it in a few cases, in the faint hope that further experience may lead us to take a more favourable view of its action (Alexander Marsden, Senior Surgeon to the Cancer Hospital).—*British Medical Journal*, 19th June 1880.

DANGER ATTENDING THE ADMINISTRATION OF CHIAN TURPENTINE.—Chian turpentine has been proposed as a remedy in certain forms of cancer; it is therefore desirable that those who prescribe it should know that a very serious result may follow its administration, since it appears to be sometimes absolutely indigestible; indeed, it may reasonably be inquired whether it is *ever* digested. A patient of mine, suffering from cancer of the pancreas, eager to catch at any straw, procured, unknown to me, a box of Chian turpentine pills from Mr Clay of Birmingham. She took in all about thirty pills, when, finding herself no better, but rather worse, she discontinued the medicine. She began the pills on 27th April. On 25th May, or about three weeks after taking the last pill, she vomited a solid, sticky, yellow, fish-shaped mass, smelling

strongly of turpentine, weighing one hundred grains, and measuring two inches and a half by three-quarters of an inch, and being in depth a quarter of an inch, apparently a crude undigested block of Chian turpentine (William F. Marsh Jackson, M.R.C.S.)—*British Medical Journal*, 26th June 1880.

HYPODERMIC INJECTION OF CHLOROFORM IN SCIATICA.—Dr Blache directs, in *L'Union Méd.*, 11th May 1880, that the first injection of pure chloroform be made at the highest point of the seat of pain, throwing in a syringeful, or about one grain and a fifth. Next day the injection should be made lower down, and the third day lower still. In certain cases even two or three injections may be made the same day, thus inserting three or four grains of chloroform. In obstinate cases Dr Besnier advises the injection of an entire syringeful at the highest point, a second opposite the great trochanter, a third near the head of the fibula, and a fourth at the malleolus. If the pain has not disappeared at the end of three or four days, recourse should be had to other means of treatment.—*Medical Press and Circular*, 7th July 1880.

THE ACTION OF QUININE, DIGITALINE, and ATROPINE.—Dr Guido Cavazzani has arrived at the following conclusions on this subject (*Annali di Med. Pub., &c.*)—Quinine and atropine have an astringent action on the peripheral vascular extremities. They correct the vascular dilatation caused by digitalis. Atropine and digitaline are antagonistic, the first giving tone to the terminal vessels and paralyzing the heart, the second producing an opposite effect. These two remedies associated cause considerable slowing of the ventricular contractions of the heart, and much less slowing of the auricular contractions. Quinine and digitaline combined reciprocally increase their force of action. Quinine and atropine neutralize each other as to their action on the heart. These three remedies given singly may cause a state of collapse, which in quinine is due to ischaemia of the heart, in digitalis to its tetanization, and in atropine to its asthenia.—*Medical Press and Circular*, 7th July 1880.

OLEATE OF BISMUTH IN ECZEMA.—In 1876 Messrs Hopkins and Williams prepared at my suggestion an oleate of bismuth, and subsequently I wrote a paper describing its mode of preparation and therapeutical uses, which was read by Mr Betty at the Pharmaceutical Society on the 9th of December 1876, and duly reported in their Journal. I had then already had some experience of its value, and a more extended trial has warranted me in describing it as a useful remedy in many cases of catarrhal inflammation of the skin. I have found it specially useful in gouty eczema. Suitably diluted, it is very serviceable in gonorrhoeal discharges and in otorrhoea. Louis Lewis, M.D.,—*British Medical Journal*, 26th June 1880.

STYRONE—A NEW ANTISEPTIC.—Dr Beach (*Boston Medical and Surgical Journal*, 11th March 1880) recently exhibited before the Boston Society for Medical Observation a new antiseptic, derived from storax and balsam of Peru, which combines properties that ought to make it a valuable addition to the armamentum at least of the surgeon. It is obtained from styracin (cinnyl cinnamat) by heating with caustic alkalis. It is itself cinnyl hydrate, C_9H_7HO . It crystallizes in soft, silky needles, having a sweet taste and odour of hyacinths, melting at 33° F., and volatilizing without decomposition at a higher temperature. It is moderately soluble in water, one part in ten or twelve, and freely in alcohol and ether. Dr Beach had tested the efficiency of the antiseptic by applying it in saturated aqueous solution to a foul, ulcerated surface, with the effect of completely deodorizing it. The same surface was dressed with sheet lint saturated with an emulsion of the styrone and olive oil, one to twelve, covered with thin gutta-percha, and the edges of the gutta-percha fastened to the skin with collodion. At the end of five days the dressing was removed, and the accumulated secretions were found sweet, having only the agreeable odour of the styrone. The pure styrone is slightly irritating to a raw surface, causing a burning sensation; but diluted to one part in six, either of oil or water, it forms a non-irritating emulsion. In either form it is a perfect deodorizer of a foul wound, and does not interfere with the process of cicatrization. One part in twelve of oil or water is sufficiently strong to be effective. In a comparative experiment it was found that a specimen of urine to which carbolic acid had been added (1 to 150) became offensive on the sixth day, developing bacteria; a similar specimen, to which a like quantity of styrone was added, was in good condition at the end of fifty-nine days, free from any urinous or offensive odour, and containing no fungoid forms. A third specimen, treated with thymol in the same proportion, was likewise perfectly preserved.—*The Detroit Lancet*, June 1880.

A NEW ANTHELMINTIC.—Dr Lemos, in *Medicinsche Neuigkeiten*, states that the *Ocimum basilicum*, a plant known in Buenos Ayres under the name "albochaca," has an action of such a nature that the worms, in every stage of development, rapidly leave their location after the juice reaches them. Its use is so much the more to be recommended since, if no worms should be present, no injurious effect results from the plant, but a laxative and disinfectant action is the only result. Fifty grammes of the juice are given, followed in two hours by a dose of castor oil. A free discharge of the worms may be expected.—*Medical and Surgical Reporter*, 12th June 1880.

PERISCOPE OF OTOTOLOGY.

By Dr KIRK DUNCANSON, Surgeon to the Ear Dispensary, 6 Cambridge Street ; Assistant-Surgeon, Eye Infirmary ; Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

MATHEWSON ON THE EUSTACHIAN TUBE.—Dr Mathewson, in a lecture on this subject (*Annals of the New York Anatomical and Surgical Society*, March 1880), first gives a sketch of the anatomy of the Eustachian tube, illustrated by figures after Rüdinger and Politzer. Zanzibar's specula for examination of the orifice of the tube during life are next mentioned, and the author testifies that, as manipulated by Dr Prout, their introduction is not much more uncomfortable than that of an ordinary Eustachian catheter. A few remarks on the physiology and pathology of the tube then follow. In regard to catheterism, the author describes only one method. For judging of the success of inflation he relies chiefly on auscultation, but also on injection of the drumhead and the patient's sensations. Politzer's manometer for this purpose is not alluded to. Modifications of Politzer's method of inflation, which the author sometimes finds useful, are those of Dr Holt of Portland, who, instead of making the patient swallow, directs him to fill his mouth tensely with air ; and of Dr Pausley of New York, who directs to blow forcibly from the mouth with puckered lips as the air is forced into the nostrils by the bag ; and Gruber's method. In acute forms of catarrh the author employs inhalations of steam (simple or medicated), and uses Politzer's method in preference to the catheter. In chronic and subacute cases he injects through the catheter a solution of nitrate of silver (gr. v. to xx. to the ounce), blown into the tube with the air-bag, but not with sufficient force to carry the fluid into the tympanic cavity, where it would be likely to set up an undesirable degree of irritation. He also employs a solution of sulphate of zinc, 5 to 10 grains to the ounce.—*London Medical Record*, 15th June 1880.

DR WEBER-LIEL recommends (*Deutsche Medicinische Wochenschrift*, 10th April 1880), in boils of the external meatus, subcutaneous injections of a 5 per cent. solution of carbolic acid. Two to four drops of this are to be injected by one or more punctures, the point of the injecting syringe being inserted into the swollen part to a depth of one or two millimetres. When these injections are performed in the early stages, before formation of pus has taken place, the further development of the local inflammation is, according to the author, prevented. In quite the early stage a single injection often suffices, followed by ear-baths of rectified spirit containing a minute quantity of corrosive sublimate. When the boil is more advanced, several injections, either at one sitting or at different times, may be required to produce local anesthesia of the parts. The author cautions against the use of an impure solution

of carbolic acid, or of a larger quantity than from two to four drops at the commencement. If this fail to produce complete anaesthesia, the injection may be repeated the same evening with the addition of three drops of the fluid.—*London Medical Record*, 15th June 1880.

THOMAS ON HEARING THROUGH THE TEETH AND CRANIAL BONES.—Dr Thomas proposes the term “osteophone” for all appliances—including the audiphone and dentaphone—intended to aid hearing by conveying articulate sounds through the medium of the cranial bones. His researches lead him to the following amongst other conclusions:—The audiphone is much better adapted for use at a distance than the dentaphone, the latter being only suited to transmit sounds emitted near its mouthpiece. Although these instruments are of great value in a considerable portion of cases, they supply, the author considers, a very small fraction of normal hearing—much less than a *hundredth part*. It is important that this should be taken into account, for a large number of partially deaf persons suffer such disappointment at their failure to hear in full that they undervalue or altogether disregard a positive gain of many times their usual hearing. The very small fraction of normal hearing gained is, the author thinks, of priceless value in many cases of those who hear practically nothing without these instruments. In regard to deaf-mutes, the audiphone is worthless unless they possess the faculty of hearing their own voices without the instrument. The author has constructed an audiphone which can be kept in position without the use of the hand. The best material for diaphragms he finds to be Fuller’s board (or press-board) treated with shellac varnish. A simple rod of hard wood, one end of which is placed on the upper teeth of the speaker, the other on those of the listener, or on his head, acts as a powerful osteophone, and will transmit the vocal vibrations in great volume to the ears of the deaf person.—*The London Medical Record*, 15th June 1880, p. 248.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Lecturer on Diseases of the Skin,
Edinburgh School of Medicine.

TO DISGUISE THE SMELL OF IODOFORM.—Lindemann publishes experiments which he has made with various substances, and has come to the conclusion that balsam of Peru completely masks the odour of iodoform, rendering it endurable even by the most sensitive olfactory organ. Two parts of bals. Peruvian. to one of iodoform are sufficient, but the proportion of the former may be increased. Vaseline is the best excipient for ointments, but it can also be made up as a lotion. Thus—

R	Iodoformii,	1·0	
	Bals. Peruviani,	2·0	
	Vaselini,	8·0	M. f. ung.
R	Iodoformii,	1·0	
	Bals. Peruviani,	3·0	
	Sp. vini rect. vel		
	Glycerini,	12·0	M. f. lotio.

The iodoform and the bals. Peruvian. should, in compounding, be mixed first, and when so mixed be added to the vehicle.—*Allg. Med. Centralzeitung*, No. 20, 1879.

GIANT URTICARIA.—Under the unsatisfactory title of “a peculiar skin disease,” Laudon of Elbing relates two cases which are undoubtedly to be referred to the giant urticaria of Milton, though Laudon, like many Germans, has never heard of his paper, which originally appeared in the pages of the *Edinburgh Medical Journal*. The one patient was a married woman, aged 28; the other was the author himself, aged 40. In the first case the disease appeared, after much exposure to heat and cold and long-continued muscular exertion, as an erysipelatous swelling of the skin of the left hand, accompanied with some itching. This lasted two days, and slowly subsided. Next day the right hand became similarly swollen, subsiding towards evening. After a pause of a week the left foot and skin of inner surface of leg swelled, with sensations of itching and pain. After a longer interval the skin round the mouth swelled, and before this had quite disappeared the right cheek and eyelids swelled so considerably that the latter could not be opened, and like elevations of the skin made themselves manifest on other parts of the body. The affection lasted three months in all; the general health was not so much interfered with as to prevent her pursuing her household duties, though there were some night-sweats. In the second case the affection appeared first after a chilling, as a pharyngitis of so rapid and severe a character that he feared suffocation. This lessened and disappeared after the action of an emetic. Then followed an erysipelatous-like swelling of the penis and scrotum, with itching and heat, which lasted two days. The ball of the thumb, the foot, the mouth, and the supra-orbital regions were all in succession invaded. The attacks became less severe, and the intervals longer, till at the end of ten weeks the disease ceased. Although somewhat depressed in spirits, his general health was good, and he remained actively engaged in practice. The urine in both cases was normal, but he also had night-sweats. Treatment exerted no influence; the disease seemed to wear itself out. Laudon rejects the idea of its being an urticaria, and refers it to a neurosis of the vaso-motor system; but the cases bear the closest resemblance to those described by Milton, and his name of giant

urticaria seems, in the meantime, the best which can be applied to them.—*Berliner Klinische Wochenschrift*, Jan. 12, 1880.

UNUSUAL FORMS OF *TINEA TONSURANS CAPITIS*.—Bulkley describes two of these which are apt to cause difficulty in diagnosis. In one, the entire top of the scalp may be the seat of a scaly eruption diffused quite generally, and with hardly any portion exhibiting more disease than another, and with no bare spots or those with broken hairs. But there is a certain grayness about the scales, and an absence of the oily elements of seborrhea or the dry white character of the scales of squamous eczema. The microscope reveals abundance of the parasite in the scales and portions of hairs obtained by scraping. In another form there are neither the well-defined rounded patches nor the diffuse scaly condition, but at each point where the parasite attacks there is a small amount of inflammation, resulting in a pustular eruption, each point being almost as small as those sometimes seen in impetiginous eczema of the scalp, and indeed it closely simulates this latter. These are most commonly met with in pale, strumous children with light hair and delicate skins, and though chiefly among the poor, still occasionally also in private practice. The parasite here is with difficulty discovered, as the pus acts as a parasiticide. When ring-worm is over-treated, sometimes a very scaly condition of the scalp is induced which has nothing to do with the original disease.—*Archives of Dermatology*, April 1880.

ACNE INDURATA OF MANY YEARS' STANDING—SUCCESS OF THE CHRYSOPHANIC ACID TREATMENT.—Dr Macdonnell of Montreal reports an obstinate case of acne indurata which was cured by the application of an ointment containing fifteen grains of chrysophanic acid to the ounce of lard. The patient was a married woman, 53 years of age, and the mother of six children. There was no uterine difficulty or syphilis. The face had always been covered with acne pimples, but the indurated condition had only existed for three years, the whole face and ears being affected. The ointment was at first applied every second day, and then every day. In seven weeks a cure was effected, and there had been no return of the disease in six months.—*Canada Medical and Surgical Journal*, March 1880.

NEW MODE OF TREATING PHYMOSIS.—Hue suggests a plan which does away with the necessity for chloroform, and is less painful than the ordinary modes of procedure. He threads a needle with a thread of indiarubber (which may be easily got from an elastic brace), covers the point of the needle with a small piece of soft wax, and so insinuates it between the glans and prepuce as far as he desires to divide the latter. He then pushes the needle through the prepuce, and so pulls the thread through. He now stretches the indiarubber at both ends, and secures it in this

stretched condition by tying a thread of silk round. In ten days the elastic ligature has cut its way out, and in from ten to twenty more the wound has become healed. In about seventy cases Hue was satisfied with the final result. Horteloup, commenting on this, regards the procedure as better suited for children with a short prepuce than in cases of phymosis of inflammatory origin, or where the foreskin is long.—*Bull. de la Société de Chirurgie de Paris*, tome iv. No. 8.

PERISCOPE OF OPHTHALMOLOGY.

By GEORGE A. BERRY, M.B.

A NEW OPERATION FOR ENTROPION OF THE LOWER LID.—The usual methods of operating consist in excising broad longitudinal folds of skin, in order to get cicatricial contraction in a direction normal to the edges of the lids; or traction in this direction is obtained by vertical sutures. The principle underlying these methods is faulty according to Dr Hotz of Chicago (*Klinisch Monatsblätter f. Augenh.*, May); it is unnecessary to produce any powerful traction, which, moreover, is uncertain or transitory in its effect, as a very slight amount is sufficient if properly maintained. This can be done by gently stretching the skin of the lid, and uniting it to the under border of the tarsal cartilage, which is firmly attached to the bone of the orbit by the fascia tarso-orbitalis. Hotz performs his operation in the following manner:—A horizontal incision is made through the skin from the inner to the outer canthus, at a distance of from 4 to 6 mm. from the edge of the lid. On separating the edges of the incision the orbicularis muscle makes its appearance. A few touches with the scalpel in the direction of the skin wound separates the muscle into a ciliary and orbital portion, and lays bare the lower border of the tarsus. The muscular fibres which lie immediately under the upper border of the incision are then removed from the one angle of the incision to the other. The skin of the lid can now be directly united to the tarsus—generally four stitches are necessary, at a distance of 5 mm. apart. The curved needles are passed first through the upper portion of the skin near to its edge, then well through the tarsus, emerging slightly below the border, and, without enclosing any of the orbital portion of the muscle, are brought out through the skin below the incision. When the sutures thus introduced are knotted, the two borders of the skin wound are brought in contact with the tarsus and with each other. A reference to the diagram contained in Hotz's paper will make this clear. Very little reaction follows the operation, and the stitches can generally be removed on the third day.

ON CATARACT EXTRACTION.—Dr Borysiekiewicz (*Klin. Monatsbl. f. Augenh.*, June) gives the result of five years' experi-

ence of cataract operation as assistant in Professor Stellwag's clinic at Vienna. The object of his paper is to point out the relative value of two different incisions which were employed in about an equal number of cases. Of the 365 cases of senile cataract in which the operation was satisfactorily performed, 184 were extracted by means of what he calls the "modified corneal flap incision." In this incision the puncture and counter-puncture are made 1 mm. above the horizontal diameter of the cornea, at a distance of 1 mm. from its edge, whilst the middle of the wound is allowed to fall within the cornea by turning the edge of the knife forwards. The remaining 181 were extracted through a "sclero-corneal flap incision" with a conjunctival flap. In all cases the incision was made upwards, and the eye fixed by means of forceps. Chloroform was administered in 7 cases. The patients were always visited within two hours of the operation. If they complained of a burning sensation in the eye, the bandage was at once removed and the lower lid slightly drawn down, so as to permit of the escape of the accumulated tears; this generally affording immediate relief. The eye itself was in all cases looked at from six to seven hours after the operation, and then twice daily. On comparing the two incisions it was found that (1) the anterior chamber was reformed within twenty four hours in 74 out of the 184 cases in which the corneal flap was resorted to, and in 144 out of the 181 operated by the sclero-corneal incision; (2) primary purulent infiltration of the wound occurred twice in the first case, not at all in the second; (3) secondary infiltration following iridocyclitis occurred four times after the modified corneal, five times after the other incision; (4) reopening of the wound was observed fifty-four times in all—thirty-eight times after the modified corneal flap incision, in six of which it was followed by purulent infiltration of the wound, and sixteen times after the sclero-corneal operation, when it was followed by no bad consequences. Atropine was always used as an aid to the diagnosis of the nature of the cataract, but was also found to be of use in the prognosis; the cases in which a maximum mydriasis was not obtained were generally found to be accompanied by a troublesome amount of bleeding after the iridectomy, rendering it difficult to remove any soft matter remaining. Before operating, eserine was used, as less support, it was considered, is given to the lens when the pupil is dilated, and consequently rupture of the zonula, followed by escape of vitreous, is more likely to take place; besides, the retraction of the angles of the wound of the iris is less complete under atropine. The conclusions which the author draws from his statistics are: 1. The external wound should lie in the sclerotic; 2. The incision must be more or less curved, the height of the flap being determined by the size of the nucleus; 3. The departure from the linear wound is made up for by the conjunctival flap; 4. Artificial mydriasis is of value in the prognosis. The author also makes some remarks on the extraction of the lens in its cap-

sule. In order to find out which kind of cases are most suitable for this operation, he carefully noted all the cases in which dislocation of the lens took place, between 1874 and 1877, during the ordinary operation properly performed. He found that in two forms of cataract an easy rupture of the ligament may be anticipated — (1) In over-ripe cataracts with a large nucleus; (2) in immature cataracts of myopic eyes, which are long in ripening and have a large nucleus. 28 cataracts, 19 of which belonged to the first and 9 to the second category, were extracted in their capsule in the following manner:—After a sclero-corneal incision with conjunctival flap, followed by iridectomy, the lower portion of the lens is fixed by a large, sharp iris-hook thrust as deeply as possible through the capsule into the nuclear substance, and causing the rupture of the ligament by pushing the lower edge backwards and the upper forwards. This succeeded in 23 of the cases, 1 of which was followed by irido-choroiditis and 2 by loss of vitreous.

SYPHILID OF THE CONJUNCTIVA.—Syphilitic affections of the conjunctiva alone appear to be very rare, and generally to take the form of gummata. The following case occurred in the practice of Dr Sichel fils (*Centralbl. f. Augenh.*, May):—Alfred G., aged 28, presented himself for treatment on 1st October 1877, complaining of considerable irritation at the inner angle of the right eye, as if there were some foreign body in it. There was neither photophobia nor periorbital pain, but the eye was half closed. On separating the eyelids a slight, fairly well-defined injection of the conjunctival vessels was seen in this region, in the centre of which was a reddish-yellow, oval growth of the size of a grain of corn, which resembled on the one hand a phlyctenula, on the other a pinguecula. It was of pretty firm consistence, but only slightly elevated above the surrounding conjunctiva. Ten days later, when the patient was next seen, it measured 13 mm. horizontally, and 6.5 mm. vertically. It was now of the shape of a horse-shoe, with the concavity towards the cornea, and slightly raised above the rest of the conjunctiva and covered with muco-pus. When viewed through a lens with oblique illumination, the surface was found to be uneven, and presented the appearance of being made up of a number of small elevations arranged in groups; the whole growth was surrounded by a vascular network. The age of the patient and the rapidity of the growth of the tumour was against the probability of its being either an epithelioma or simple hypertrophy of the conjunctiva. On the other hand, the presence of a papulo-squamous eruption over the arms and trunk, as well as the traces of a primary syphilitic sore, were suggestive of its specific origin. The diagnosis of conjunctival syphilis was confirmed by Fournier and Ricord. Under mercurial treatment every trace of the growth disappeared in six months.

ON THE TREATMENT OF SCLERITIS.—Galezowski (*Revue d'Oph-*

thalnologia, May) considers it of great importance to distinguish between scleritis and sclero-keratitis. When the inflammation begins at some distance from the cornea, it is seldom complicated with iritis, and though often rebellious, disappears in the long-run without leaving any trace. If the inflammation of the sclerotic begin near the cornea, serious complications in the shape of iritis and keratitis are apt to ensue, and necessitate surgical interference to prevent more or less complete blindness. For the first form Galezowski uses alternate instillations of atropine and eserine, blisters to the temples, steam douches to the eyes, and, internally, salicylate of soda if of rheumatic, and iodide of potassium if of syphilitic origin. Atropine alone introduces the complication of paralysis of accommodation, which is generally more disagreeable for the patient than the slight inconvenience caused by the scleritis itself. This is avoided by using atropine in the evening and eserine in the morning. In obstinate cases, scarifications at intervals of ten days are often useful. For sclero-keratitis, iridectomy is, according to Galezowski, little short of a specific.

Part Fifth.

MEDICAL NEWS.

FORFARSHIRE MEDICAL ASSOCIATION.

At the twenty-second annual meeting of the Forfarshire Medical Association held in the White Hart Hotel, Arbroath,—J. S. Crichton, Esq., M.D., etc., President, in the chair,—there were present—Drs Waman, sen., Dewar, and Keith Anderson, Arbroath; Drs Arrott, Rorie, Pirie, Miller, A. J. Duncan, Macewan, Sinclair, Chas. Moon, Macleod, and Geo. Duncan, Dundee; Lawrence, Montrose; Paton, Carnoustie; and Walker, Frioekheim. Professor Simpson, Edinburgh, and Surgeon-Major Jobson, Army Medical Department, were present as guests.

After some routine business, Dr Sinclair, the Secretary, said—Within the last few weeks a measure has been brought before Parliament which seems to me to call for some action on our part. It is entitled “A Bill to amend the Vaccination Acts,” and bears the names of Mr Dobson and Mr Hibbert. It is an excellent specimen of the kind of legislative wisdom that often passes for statesmanship, but may be more correctly described as an attempt to gratify the morbid whims of a society of hopeless fanatics, about whose freedom to do wrong the President of the Local Government Board seems most tenderly anxious. By one sweep it proposes to

substitute for compulsory vaccination a system that will enable foolish parents, on the payment of two nominal fines, to make their children centres for the diffusion of a disease that was fitly described by Macaulay as "the most terrible of all the ministers of death"—a disease that in past times frequently decimated the population, committing its terrible ravages equally in the families of kings, nobles, and citizens, filling churchyards, and permanently disfiguring the survivors. It is hardly necessary, in a meeting of medical men at this time of day, to adduce arguments in favour of vaccination in early childhood and revaccination at puberty. But it is necessary that the public should know that the experience of our profession in vaccination and vaccination legislation, spread over a period of eighty years, has culminated in an impregnable opinion of the efficacy of revaccination, once efficiently performed, to practically stamp out smallpox from our bills of mortality, and a conviction from an array of uncontradicted facts that the statements of the anti-vaccinators are as baseless as a house built on a quicksand. A Cabinet Minister with Mr Dobson's generous consideration for Her Majesty's subjects might well have found a more fitting task for his energies in promoting legislation in favour of compulsory revaccination, and in imitating the laws of France and Spain, which deny admission to their public schools to unvaccinated children, than in introducing a measure characterized very truly the other day by Mr Ernest Hart as a "sale of indulgences" to extravagant enthusiasts who are constantly flooding the country with angry denunciations and exploded fallacies. There probably never was a time in the history of the world when so many people as at present could be brought together to prate with a show of learning and philosophy about the liberty of the subject—a liberty that on investigation too often means permission to inflict injury on one's neighbours. If the visionary zealots who waste their time on anti-vaccination agitation would only imitate, in the spirit of their investigation, the example of the "few calm and thoughtful students who," in the words of Professor Huxley, "banded themselves together some twenty years before the outbreak of the plague for the purpose of improving natural knowledge," and laid the foundation of the Royal Society, they would not be long in discovering evidence enough to satisfy every reasonable man and woman of the inestimable blessings of vaccination, of the strong scientific basis on which it rests, of the utterly trivial character of the ingenuous and disingenuous objections which are being constantly raised against its practice by people who know nothing of the horrors of smallpox; they would feel themselves obliged to admit the force of the conclusions formed by the Epidemiological Society in 1850, after one of the most full and careful inquiries on record, that the sole cause of the continued mortality from smallpox was the neglect of efficient vaccination; and I do not think they would find themselves with one valid objection to the ground taken by the late lamented

Dr Seaton, who acted as secretary to the inquiry committee, that "no measure which does not render vaccination compulsory will be sufficient to ensure the efficient protection of the population of this country from the ravages of smallpox." And, finally, if they possess the slightest shade of gratitude in their composition, they would acknowledge the obligation under which the whole world rests to the immortal Jenner for elucidating by patient research, and propagating by the expenditure of the energies of the best years of his life, the truth of a discovery which entitles him to rank with benefactors like Hampden, Clarkson, and Wilberforce. With the certainty that I shall receive the unanimous support of this meeting, I beg to move—"That the Forfarshire Medical Association authorize the President and Secretary to transmit a petition to Parliament praying that the 'Bill to amend the Vaccination Acts' which has been introduced by the President of the Local Government Board be not permitted to become law."

The motion was seconded by Dr Miller, Dundee, and unanimously agreed to.

The following is a copy of the petition:—

A Bill to Amend the Vaccination Acts. A.D. 1880.

Unto the Honourable the Commons of Great Britain and Ireland in Parliament assembled, the petition of the Forfarshire Medical Association.

Humbly sheweth,—That the above Bill is before your honourable House for the purpose of limiting the penalty for non-vaccination. That the principle of compulsion, which is insisted on by all competent authorities, is not recognised by the said Bill. That when smallpox occurs among unvaccinated or imperfectly vaccinated communities it commits the most terrible ravages, both by its enormous mortality and the disfigurement and crippling of those who survive. That the whole current of medical opinion is strongly in favour of the view originally promulgated by Dr Jenner, that efficient vaccination "will protect the constitution from subsequent attacks of smallpox as much as that disease itself will." That compulsory vaccination has already exercised a powerful controlling influence on smallpox. That no valid objection has ever been raised to the practice of vaccination.

May it therefore please your honourable House to refuse to pass the said Bill, and your petitioners will ever pray. In name and by the authority of the Forfarshire Medical Association.

JOHN S. CRICHTON, M.D., President.

ROBERT SINCLAIR, M.D., Secretary.

WARNING TO TRAVELLERS.—A communication which we have received from a traveller describes a severe outbreak of typhoid fever in Switzerland, to be traced, it is stated, as most of such outbreaks are traced, to impure drinking water. Sir Henry Thompson, alluding to this abundant source of danger to travellers,

recently recommended that every traveller should carry with him a filter and a teapot, by way of practically abolishing by personal care some of the danger of impure water by securing that it should be very thoroughly boiled before being used. Dr Hermann Weber, whose experience of foreign resorts is perhaps greater than that of any other English authority, has published a similar warning to travellers, and has recommended them to use Apollinaris water whenever it is to be obtained, as an undeniably pure drinking water, which would secure them from these dangers; and he has stated that he has known, in more than one instance, when members of the same travelling party have been careful to adopt this precaution, while others have neglected it, that those who adopted such precautions have been saved from typhoid fever, which attacked other members of the party. In the meanwhile, some such precaution for obtaining drinking water of absolute and guaranteed purity must recommend itself as a necessary means of safety. Recent analysis by chemical authorities, of which some of the results are before us, have shown that the water contained in the syphons which are introduced at foreign *restaurants* is not more reliable than the ordinary water supply; indeed, a table before us, to which, perhaps, we shall subsequently have to refer, indicates that, in one great foreign city at least, the water in the syphons is very much more impure than even the ordinary city drinking water, being in some cases little better than diluted sewage water. It appears that the manufacturers of these aerated waters in foreign syphons are by no means very careful from what kind of surface-wells they draw their supply, or how they purify their water; and, on the whole, the danger of drinking the aerated water of syphons is, unless the quality be definitely ascertained, greater even than that of drinking the ordinary impure water. It is quite time that foreign authorities should turn more serious attention to this subject.—*British Medical Journal*.

OBITUARY.

DEATH OF BROCA.

IN the night of Monday and Tuesday, the 8th and 9th July, a man of high account in science—Dr Paul Broca of Paris—paid the debt of nature at the too early age of fifty-six. He died of angina pectoris, quite unexpectedly—we may say suddenly—at his residence. On the evening of the 8th, he complained, for the first time, of feeling unwell. Up to that time, he had been apparently in his usual health, sustaining a daily amount of minute, painstaking observation and other mental work of the highest class. Very various estimates have been put forth within the last few days of the value of Broca's scientific labours; and some, with the writer of these lines, may be unable to accept implicitly all his alleged cerebral discoveries and anthropological teaching; yet all who knew Broca personally and by his works will, we think, agree that by his death

we have lost a great original worker, and a truth-seeking colleague. Trelat well said, when speaking at his tomb, "Broca's scientific career consisted of forty years of unceasing work, forty years of dignity, elevated patriotism, and devotion to every noble cause."

The Parisian daily newspapers erroneously announced (before the autopsy) that Broca died suddenly from rupture of an aneurism of the aorta. The exact cause of death was not revealed by the autopsy; but we have ascertained some particulars of Broca's last hours from a reliable source, which throw some light upon it. Nothing had led his family or any of his friends to fear his sudden death, or to suppose that many years of active work were not still before him. His countenance was habitually pale; yet his appearance was cheerful, and indicative of an almost buoyancy of health. Occasionally he had complained of what he called "intercostal neuralgia" in the left side. In the natural course of time, his hair and whiskers had become whitened; but nevertheless, up to the day of his fatal seizure, he had a certain amount of youthfulness in his gait, his step being quick and elastic. He walked with erect head and well-expanded chest. He spoke with a full clear voice. On the day preceding his death, he followed his ordinary avocations, including attendance in the afternoon at a sitting of the French Senate. He complained when in the Senate of pain in the chest. He then returned home, where he soon felt better; and dined well in the company of his wife and children. In the evening, he set to work in his study as usual. Towards midnight he again complained of pain in the chest; and having stated to his wife that he experienced a feeling of suffocation, he reclined upon a sofa, where he shortly afterwards breathed his last before there was time to procure any medical aid. There was no noteworthy lesion of the heart or arteries. The brain was healthy: it weighed 1400 grammes—that is, about 50 ounces avoirdupois.

Broca was nominally a Protestant. His funeral service was conducted by the Protestant pastor, Mr Coquerel. He was sprung from a Protestant family of the Gironde. His father, a retired army surgeon, died two years ago at Sainte-Foy-la Grande, a small town of the Gironde, where his illustrious son was born in 1824. After completing the usual course of school duties, he brilliantly inaugurated his academical career by taking with high honours, at the early age of sixteen, the degree of Bachelor of Mathematical Science. This fact indicates that the natural bias of Broca's mind was towards that *precision*, that mathematical exactitude, which characterized his modes of observation throughout his whole career.

In 1842 he came to Paris to pursue his medical studies, which he had already begun at Bordeaux. In 1846, when an "interne," he competed successfully for the post of assistant anatomist in the School of Medicine. In 1848 he took his degree in medicine. Immediately afterwards he was nominated professor at the *École Pratique*. In 1850 he obtained the Portal prize for his essay on the morbid anatomy of cancer. In 1853 he became "Professeur Agrégé"

of the Faculty of Medicine. In 1859 his treatise on aneurisms appeared. Soon afterwards he published the first volume of his great work on tumours, an abstract of which, written by himself, appeared in 1860 or 1861 in Dr Costello's *Cyclopaedia of Practical Surgery*. In 1866 he was elected almost unanimously a member of the French Academy of Medicine (for the section of surgery). In 1867 he was appointed to the chair of "Pathologie Externe" in the School of Medicine. At and after that date honours fell thick upon him. Successively he held the appointments of surgeon to the Hôpital St Antoine, the Hôpital de la Pitié, and the Hôpital des Cliniques. At the time of his decease he was Surgeon to the Hôpital Necker, Perpetual Chief Secretary to the Anthropological Society, Professor and Director of Practical Studies at the Anthropological Institute. During the present year he was chosen Vice-President of the French Academy of Medicine, and was elected for life a member of the French Senate, in which latter capacity it is well known that he had hoped to help in consolidating the Republic, assist in placing the education of women upon a more reasonable basis than that which it now occupies in France, and promoting legislation in other social questions.

The versatility of Broca's mind was wonderful; in every department of science he was well informed; his powers of mental assimilation were very great. The extent to which he possessed these peculiarities is shown by the fact that between 1849 and 1860 he published more than two hundred separate papers and monographs on anatomical and surgical subjects. His great range of subjects and the marvellous fecundity of his pen has led some to maintain that he was a mere assimilator and skilful user of the researches of others. We have heard it said by one who—from an outside and dispassionate standpoint—was acquainted with the literary life and labours of both, that a considerable similarity existed between the magnificent intellectual capacities of Broca and our own James Y. Simpson. Neither, he maintained, possessed nearly so much originality as was attributed to them by current readers of the day; both had to perfection the art of giving an original and individual aspect to old materials, thoroughly assimilated, and reproduced in improved form with an attractive accompaniment of sharp personal sance. In this criticism there is a certain amount of truth—the quantum of truth will be differently estimated by different persons. Be that as it may, after deducting all that it is possible to deduct from Broca's claims to originality, much will remain—particularly in his researches into aphasia, cerebral functions, and cerebral localizations—that is both original in essence and masterly in execution. Where is the medical doctor or student who has not heard of the "convolution of Broca?" Broca established that the faculty of language is located—though not exclusively—in the posterior part of the third or inferior frontal convolution of the left hemisphere. Here, however, the whole truth has undoubtedly yet to be discovered. Dr Hughlings

Jackson, it must be remembered, has shown (*Lancet*, 1866, 1867, and 1868) that language is emotional or intellectual; for example, it is purely emotional when, as sometimes happens, an entire phrase is uttered under emotion by one who has entirely lost the power of expressing ideas by words.

Broca was so highly favoured by fortune as not to need to think of *honoraria*. The lady whom he married was a daughter of the late Dr Lugol, a rich and well-known Parisian hospital physician. As Broca did not require to live by his profession, he did not care for private practice, which he neither cultivated nor quite refused. He was a good surgeon, however, and did his work well in every sense among his hospital patients. To the last he performed daily his surgical duties at the Hôpital Necker, taking a keen interest in his cases, and using every possible means to promote the well-being of his patients.

In 1859 there appeared a new science, to which Geoffroy-Sainte-Hilaire, de Serres, de Quatrefages, etc., had lighted the way. Broca became at once its most ardent promoter; and before a year had elapsed he had founded the Society of Anthropology, after having founded the science itself in France. From that moment to the day of his death, he devoted himself, in many ways, with all the intense earnestness of his enthusiastic nature to the development of anthropology, undertaking with that object numerous scientific journeys.

Already distinguished as anatomist, pathologist, and surgeon, the restless activity of his mind now in its new bent developed a vast number of original researches, revealing him to the world as the greatest anthropologist of the day.

Gifted with a wonderful memory and a rare capacity for work, contributions and papers on the most varied subjects followed each other in rapid succession—the *Comparative Anatomy of Man and of the Primates*; *Researches upon the Capacities of the Skulls of different Races of Men*; *Pre-historic Man*; *Artificial Deformity of the Skull in Pre-historic and in Modern Times*; and, above all, his invaluable *craniometric* researches, followed by his well-known *Instructions for Mensuration of the Skull*, a work which has been translated into the languages of all countries in which science is cultivated.

In 1876 he founded, in connexion with the Anthropological Society, the Anthropological Institute, where are delivered public lectures upon comparative anatomy, ethnology, and ethnography, linguistic science, demography, etc., and where practical instructions in craniometry and anthropometry in general are given. Here, in the dissecting-room or in the laboratory, Broca was to be met with almost every afternoon until a few hours before his death, now measuring a skull or some other part of the body, giving instructions to a pupil, or receiving a colleague or a visitor; at other times, apron on and sleeves tucked up, hard at work in the dissecting-room upon some interesting subject; but whatever he was doing, he gave his whole mind and attention to it.

Broca had a great taste for mathematics, and had attained considerable proficiency in that department of science in early life. This taste and talent no doubt contributed in a large measure to the development of the rigid methods of positive observation and of scrupulously exact experimentation which he employed in all his researches. He was also possessed of a wonderful fertility of invention. He has left in the School of Anthropology quite an arsenal of ingenious contrivances for measuring skulls and for other purposes:—among them, his little instrument to enable the student to calculate in a moment the sphenoidal angle, the importance of which, in distinguishing skulls of different races, has been pointed out by Virchow, but which angle could formerly only be measured after sawing the skull in two.

In the Academy of Medicine, Broca was sparing of his voice, rarely taking part except in important discussions. Next to anthropology and comparative anatomy, the subjects in which he took most interest were questions relating to public health and the education of the people. To that department of literature he has made valuable contributions, among which may be mentioned his papers on "Infant Mortality," "Population Movement in France," "Pretended Degeneracy of the French Race," "Organization of the Sanitary Service of the French Army." His election some months ago as a life member of the French Senate opened up to him the prospect of much usefulness in sanitary and educational legislation. The last work of his pen for public use was a report of a Committee of the Senate on the Secondary Education of Women, which, though it has not yet seen the light, is being talked of as a masterly exposition of a crucial question in France, where, as a rule, female education is almost limited to the catechisms of the Church, with the addition, for the upper classes, of showy accomplishments for the drawing-room. Broca was diametrically opposed to the view of Dupanloup, the lately deceased Bishop of Orleans, to the effect that a general education was unsuitable for women, who ought, as he expressed it, to be brought up *sur les genoux de l'église*. Broca, on the other hand, maintained that the only effectual mode of educating a nation is thoroughly to educate all the women. It has been often said, but it is not yet sufficiently understood and believed, that most men who have risen from the ranks to eminence in the various spheres of intellectual occupation have been principally indebted for the distinction which they attained to the devoted training of loving and intelligent mothers.

In the private relations of life, Broca was much esteemed by all with whom he came in contact; by those who knew him best and longest he was the most sincerely loved. He possessed a peculiar dash of originality and independence, which gave zest to his conversation and his companionship; and yet it would not be correct to say that there was any eccentricity—far less any clap-trap—in his winning ways. In the relations of professional and social

life, his loyalty and integrity were proverbial. He was quick, generous, and undemonstrative in rendering service; he seemed often to try to make it appear that he was the obliged when he was the obliging party. In everything he went into, he was intensely earnest. This leading characteristic of the man often excited opposition, but seldom engendered enmity. The earnestness, the thoroughness of Broca is well illustrated by an anecdote of him which I took down the other day, in contemplation of writing this sketch, from the lips of one of his old friends and pupils. My informant described his first visit to Broca, which took place in December 1850. The then young prosector of anatomy was busily engaged, and had before him an English grammar and dictionary. For what purpose was he thus occupied? That he might be able to read Thackeray's *Vanity Fair* in the original! Referring to an excellent French translation of the work which had just appeared, and was on his table, he said, "The best translation only gives the meat without the sauce, and I wish to have both." This trait of thoroughness, shown thirty years ago in the incident now narrated, was constantly being exemplified in the actions of his future life.

Some diversity of opinion has been expressed as to Broca's religious opinions, a fact which is probably explained by the subject being one into which he did not enter in his writings, prelections, or private conversations. This, however, I know, that he did not like to be spoken of as a free-thinker ("libre penseur"); and he was not a reviler of the clergy. Nevertheless, in practice no man could be less trammelled by religious beliefs in investigating and speculating upon the secrets of nature and the origin of man. Pressed one day by a Darwinian for a reply to certain questions, he said smilingly, "Yes! *homo* must have had an ancestor, and the gorilla is assuredly *homo's* cousin." Upon another occasion, at the close of an anthropological lecture, when a visitor remarked to him that he had not used a good opportunity of denouncing "clericalism," he replied, "My discourse was an elucidation of comparative anatomy, and to have entered on the other topic would have been foreign to my purpose and disagreeable to some of my audience." Weighing carefully such evidence as is attainable, the result seems to be this:—Broca respected the opinions of religious men, and was not an atheist; yet he was an unfettered thinker, who had not reconciled scriptural revelation with scientific researches.

But, after all, can comparative anatomy or anthropology ever disclose to us the mystery of man's origin or explain his special nature? Is not one peculiarity of man his capacity for intellectual progress? Has he not another and a still grander peculiarity? Assuredly, there is blended in his mind with the capacity for intellectual progress an element which, though difficult to describe as an isolated element, pervades his whole nature, and constitutes a distinctive part of his psychical character—a *sense of relation*

with the Infinite. Man viewed merely as an animal is *mortal*, and returns to the dust whence he came; but by his *SOUL* he is brought into communion with his Creator and is *immortal*. J. R. C.

DR C. H. D. ROBBS.

THE fellow-students and professional friends in Scotland of Dr C. H. D. Robbs of Grantham will regret to hear of his death. Exposure incident to his arduous profession brought on double pneumonia, which ended fatally in a few days.

His professional studies being interrupted by thirteen years' exile in Australia on account of a pulmonary affection, led Charles Robbs to resume his studies at an age when the restraints of a university curriculum must have proved irksome to most men. Nevertheless he threw his whole heart into his studies, and he was a frequent medallist and honour-taker in the Edinburgh University, and graduated M.D. with honours in 1867. During his university career he was looked up to by his fellow-students as a guide and friend. After graduation he at once became partner to his father, who was in practice at Grantham, in Lincolnshire. On the death of his father he succeeded to the whole practice, which he gradually increased till it became one of the largest practices in that part of England.

Dr Robbs was characterized by high professional attainments, great energy, and a warm, sympathetic nature which caused him to be beloved by his patients, and led to his advice being sought in difficult cases by his brother practitioners. The never-ending work of a large practice prevented his being a contributor to current medical literature. A paper published in the district where he was best known says of Dr Robbs:—"The day of his death will henceforth stand out as a marked day in our parochial records, depriving us, as it did, with so brief a warning, of a noble and self-sacrificing life."

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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On Medical Education and Reform: Address to the Medical Graduates of the University of Edinburgh, 2d August 1880.* By WILLIAM RUTHERFORD, M.D., F.R.S., Professor of the Institutes of Medicine.

GRADUATES IN MEDICINE,—On the present occasion I have been deputed by the Medical Faculty to undertake the honourable duty of delivering to you a valedictory address ere you leave the University where you have received your medical education, and of which you have now become the graduates.

We congratulate you, Bachelors of Medicine and Masters of Surgery, on having passed the jealously guarded portal which separates the student from the medical graduate of our University. You have been sifted in many sieves, and weighed in many balances. The extent of your mental acquirements, the acuteness of your senses, and the dexterity of your hands have all been subjected to searching examination; and since many have failed, you are the more to be congratulated on having successfully stood the tests.

We can all sympathize with the feeling of just pride with which you regard your period of pupilage as closed, and your higher life as qualified members of a great profession now to be entered upon. But when its cares and responsibilities begin to creep over you, and to weave around you a labyrinth from which you cannot escape, you will cast a longing glance towards your old student days. You'll wish you could begin them once again, and so renew those genial, unselfish friendships which differ on many points considerably from the friendships of later life, and those golden opportunities which are probably never taken advantage of to their fullest extent. But on the threshold of your lives as medical practitioners we would seek to guard you from the error of supposing that your medical education is even now complete. You are, indeed, qualified to practise medicine and surgery, but you are not yet sufficiently able to act as altogether *independent* practitioners, because you lack the necessary experience which can only be obtained by practice. There are many important details in practical medicine which

cannot be sufficiently acquired by the ordinary teaching of the schools. They can only be readily learned by your becoming assistants for a time to medical practitioners of experience, who have charge of hospitals, or who are engaged in extensive private practice. In such positions you can appeal for guidance in all cases of serious difficulty, and you can thereby quickly gather experience and confidence with safety to your patients, and with no little comfort and saving of time to yourselves. In addition to this all-important training, some of you will doubtless seek to widen your knowledge of medical affairs, your acquaintance with foreign languages, and your experience of the world, by spending a year at the great medical schools of the Continent. And it is to be hoped that some of you will be disposed to spend some time in laboratories for the prosecution of original research and for the preparation of theses that may bring you honour.

We congratulate you, Doctors of Medicine, on having given in your theses evidence of original thought, of scientific and literary effort, which has entitled you to our highest medical degree; and we specially congratulate those of you who have won—what are in truth our highest prizes—medals for original research. We know well the great importance of our system of theses, whereby our junior graduates are incited to original thought and research. Many of your predecessors have testified that their first step on the ladder of fame was the thesis which they were obliged to prepare for the purpose of obtaining the Doctorate of Medicine.

Gentlemen,—The present condition of medical education, and the proposals somewhat recently made with reference to medical reform, have suggested some thoughts to which I would now for a short time ask your attention.

The history of medical science is that of a prolonged struggle against serious difficulties. It has successfully triumphed over many which at one time appeared insurmountable. It incessantly strives now with the many that remain. At the outset, when the complex and delicate machinery of the body was unknown, medicine was nothing but a groping in the darkness of empiricism. It made no substantial progress until the sick were gathered together into hospitals, and facilities thereby offered for the systematic study of disease and the methods of dealing with it. It was not until it had been so studied in Greece for several generations that Hippocrates—the first great pioneer in medicine—appeared. It was then the fashion—from lack of better knowledge—to ascribe many diseases to visitations from the gods, and to the entrance of evil spirits; and it was therefore natural that the priests of sacred mystery should be the dispensers of medical aid. Hippocrates, although a priest-physician, was bold enough to teach that all diseases must be ascribed to natural causes, and that the only way to understand them and to treat them successfully is to carefully study and record the phenomena which they present, and the manner

in which they are affected by remedial measures. That was the first step towards scientific medicine, and it sprang from the systematic study of disease in the hospital.

But Hippocrates knew almost nothing of the machinery of the body. The world had to have its first university—that of Alexandria—ere the anatomy of animals was systematically studied by Aristotle, and human anatomy first became the subject of investigation. Thus it came about that the *hospital* on the one hand and the *university* on the other were the real starting-points of medical science. Physiology for a time lagged behind, but the impetus of Alexandria reached Rome, and there, in the second century, Galen first taught that a study of the *dead* cannot suffice to teach us the actions of the *living* body. Under that conviction he resorted to experiments on living animals, and thereby initiated a method of research which, in his and subsequent hands, yielded discoveries regarding the functions of the organism without which the science of medicine, and the practice of it which exists to-day, had been altogether impossible. Hippocrates, Aristotle, and Galen, the three pioneers of medical and of biological science, were not only men of scientific instinct, but they were also men whose minds had been carefully trained by a liberal education.

After the great eclipse of medical science which lasted from the fall of Rome to the Renaissance, it was the country of Galen that took the lead in medical education and research; and thither many of our countrymen—amongst them Harvey—repaired to study anatomy and to gain a knowledge which could not be acquired in this country. When Harvey discovered the circulation of the blood by the method of Galen—that is, by experiments on animals, as he expressly tells us—he fixed the eyes of all Europe upon England as a centre of medical thought. When the truth of that great discovery was acknowledged, the science of medicine, which had previously been but a sapling, began quickly to grow into a large tree with many branches and much fruit. Especially during the last fifty years has the progress been rapid, and there is now a large body of truth relating to the normal structure and functions of the body; to the altered structure and functions which constitute disease; and to the means required for the prevention of disease and for its cure. To understand this mass of information—to use it discreetly—to know exactly what events can be safely predicted—to recognise, further, what are the gaps in our knowledge and the methods by which these gaps may in time be in a measure filled up,—all this requires the preliminary training of a liberal education, and an elaborate education in medicine and its closely related sciences. It requires not merely that kind of knowledge derived from systems of lectures and books, but an elaborate system of practical instruction in nearly every subject of the curriculum, whereby alone the student is enabled to feel that he has a real, living grasp of that knowledge which is needed by the medical

thinker. All this requires a complicated and expensive machinery of instruction, which is most advantageously found in universities, or in colleges partaking of the nature of universities, associated with infirmaries of sufficient magnitude.

Now, if we look back on the history of medical education in this country, we find that its present elevated standpoint has been mainly owing to the influence of universities, and most of all to those of Scotland. The origin of the medical profession in Great Britain was exceedingly humble; the barbers were the antecedents of the surgeons; certain grocers vending drugs, and giving therewith some medical advice, were the predecessors of the apothecaries. In course of time the now existing medical corporations were formed, consisting of the Colleges of Surgeons and Physicians in the three divisions of the kingdom, and Societies of Apothecaries in London and Dublin. These corporations came into existence very properly for the purpose of holding examinations and granting thereon medical and surgical diplomas to fit persons, so that the community might be able to distinguish the qualified practitioner from the charlatan, and the credit of medical science be saved thereby. But although these corporations have done not a little to raise the standard of attainment required from medical candidates, they have not done very much to directly advance their education. They almost entirely left the medical education of the student to be undertaken by private enterprise, and the private enterprise was for the most part satisfied if it enabled the student to meet the moderate demands of most of the corporations.

But in course of time the universities began to assert their influence over medical science, and to claim it as a department eminently worthy of their attention. Aberdeen was the first university in the country to have a medical professor, Oxford and Cambridge followed next, then Dublin, Edinburgh, and Glasgow. It is generally acknowledged—indeed, it is beyond dispute—that medical education first attained eminence in the universities of Scotland, and it was the University of Edinburgh that took the lead. As early as the close of the seventeenth century the development of her medical school had fairly begun; and when the first Monro was appointed Professor of Anatomy in 1720, the medical department of the University entered upon a successful career. What the influence of the Scottish universities has been on medical education you may fairly gather from the words of Professor Lankester, contained in an address¹ recently delivered in University College, London. As he has never been a student at a Scottish university, his words have the greater force. He says, “As the result of neglect on the part of the English universities, medical education was, in the last century, a thing almost unknown in England. A few young men about to enter medi-

¹ “The Relation of Universities to Medicine,” a reprint from *British Medical Journal* of 5th October 1878.

cine sought instruction in the Scottish universities, in Paris or in Italy; but, as a rule, men were passed into the medical profession simply as the customary sequence to a certain term of 'apprenticeship' to a medical practitioner, the examinations of the various corporations who had the privilege of giving 'a license to practise' being of the most feeble character. At this time, it is true, that some of the physicians to London hospitals were followed round the wards by a few disciples anxious to learn the great men's receipts, and some of the London surgeons set up independent schools for the teaching of anatomy. But as for instruction in physics, in chemistry, in comparative anatomy, in physiology, in the general properties and activities of living things, it had no existence in London, and was not in any way required on the part of the licensing bodies. The English universities, meanwhile, which possessed rich endowments for carrying on these studies, allowed jobbery and indifference to convert their ancient medical offices into sinecures." "At the beginning of this century the University of Edinburgh was the chief resort in the United Kingdom of those who desired something equivalent to what we now call a 'medical education.'" "It was from Scotland, where the torch of true university life was kept burning, that an impulse towards the establishment of better things in benighted England came, and set men to work in London."

I have quoted these words of Professor Lankester to show you that the development of medical education in this country is chiefly owing to the influence of universities, and most of all to those of Scotland. My object in so doing is not to glorify Scottish universities, but to show that they have fairly earned the right to oppose, as they recently did, the schemes of London reformers, when these are likely to lessen the influence of universities in medical affairs.

The foundation of the University of London was an important step on the part of England towards the encouragement of a thorough training in medical as well as in other sciences; but by leaving medical education in London entirely to private enterprise, the teaching of its more purely scientific branches in that city has been seriously hampered. For some reason or other, the University of London has hitherto had a smaller influence than was anticipated in elevating the education of the medical profession of England. One great reason for the success of the Scottish universities is undoubtedly this, that, unlike the University of London, they are not merely *examining*, but also *teaching* institutions. They don't distract the student by exacting a high standard of attainment, without first of all providing the means of education whereby he may raise himself to that standard. The result has not been to keep the standards of education and examination low; but, on the contrary, the examination standard has been gradually raised without difficulty, owing to the antecedent elevation of the teaching standard. And thus it has come about that a

more elaborate system of practical tests is applied in examinations here than elsewhere in the country. And because our means of instruction grow fuller year by year, our students increase in number, although our examination standard never was so high as it has been during the last few years.

Owing to the growth of universities as centres of medical education and graduation, candidates for the profession of medicine have naturally divided themselves into two classes—one desirous of a university education and degree to enable its members to attain a high place in society and in the medical profession; the other contented with the license of a corporation, and with a medical education less expensive and elaborate than that required for university degrees. Considering how varied must be the careers of medical men, what arduous and ill-remunerated labours many of them must undergo in thinly-populated parts of the country and in the poorer districts of great towns, it is a reasonable thing that those who are willing to undertake such necessary duties should be able to obtain a diploma which shall imply a knowledge of the essentials of medical science, without those refinements which may be reserved for university accomplishments. The advisability of making provision for the wants of these two classes of medical candidates is recognised by all.

Now, if we look to the proportion between those who hold university degrees and those who hold merely corporation diplomas in Scotland and England, we find that in Scotland seventy per cent. of her medical practitioners are university graduates, while in England the proportion is only twenty-five per cent., and of these fewer than one-half have been educated in England. The reason for this is, that in Scotland the best medical education is found in universities adapted to meet the wants of the middle class of the people; while in England medical education has as yet been but little so associated, because in the older universities medical education was for a long time well-nigh stifled, and also because the middle class in England has been slow to recognise the advantages of university training and to demand it. The large number of university graduates in Scotland has undoubtedly had a decided effect in elevating the position of the whole of her medical practitioners; and as a like result would follow in England, it is to be hoped that the day will soon come when her proportion of medical graduates shall have grown more numerous.

Now, gentlemen, let us examine, for a little, the system whereby legal qualifications to practise medicine and surgery are obtained.

The Medical Reform Bill of 1858 effected changes which contributed greatly to the advancement of the profession; but it is felt by many that further reform is needed. The principal ideas regarding medical reform, about which we have recently heard so much, range themselves in two categories:—1. Ideas relating to the *departments of medical science* in which every candidate ought to pass an examination ere he can obtain a license to practise. 2.

Ideas with regard to the *authorities* who should possess the power of giving the license.

With reference to the ideas relating to the *departments of medical science* in which every candidate ought to pass an examination, it cannot be denied that reform is needed. That unhappy and ill-starred Medical Reform Bill of the late Government did at all events contain one wise and welcome proposal—that henceforth no one should be registered as a legally qualified medical practitioner unless he had previously passed examinations in the essential subjects of medical science, and had thereby obtained what is termed a double or complete qualification—that is, a license to practise medicine and surgery, including midwifery.

Each Scottish university is already empowered to give this double or complete qualification in the shape of a degree in medicine and a degree in surgery. Nearly every candidate takes both degrees; but if he be disposed to take only one, he must, in the universities of Scotland at all events, pass the same, and in some other universities almost precisely the same, examinations as are required when he takes both degrees. Thus the universities do their utmost to keep men of incomplete medical education out of the profession.

Colleges of Physicians and Surgeons are empowered to give severally only a single qualification, in the shape of a diploma in medicine or surgery, as the case may be. Should a candidate desire to enter the medical profession through the less elevated portal of a corporation, he must go both to a College of Physicians and to a College of Surgeons to obtain a double or complete qualification. To facilitate this, the Corporations of Surgeons and Physicians in Edinburgh and Glasgow some years ago very wisely conjoined for the purpose of holding joint examinations, and giving a double or complete diploma in medicine and surgery. The corporations of London would have done wisely had they also united for this purpose, but for some reason or other they have not as yet succeeded in effecting a union.

But a medical candidate is not at present obliged to hold this double qualification. He can go to the College of Surgeons of London, pass examinations only in anatomy, physiology, surgery, and medicine, and thereafter obtain the diploma of surgeon and be placed on the register as a legally qualified medical practitioner. He does not require to be examined in midwifery, in the properties and uses of drugs, in chemistry, or in medical jurisprudence. But should the candidate desire to enter the profession through the portal of the College of Surgeons of Edinburgh, he has to pass through a very different ordeal. Here he cannot get the diploma of surgeon without passing not only the subjects required by the London College of Surgeons, but, in addition, all the other subjects I have mentioned. The London College could easily have rendered its examination as comprehensive as the College of Surgeons of this

city, and could thereby have exerted a most beneficial influence on the state of the medical profession in England. But it has failed to do this, and has thus contributed very largely to render reform in the subjects of medical examination imperative.

The giving of single qualifications, either in medicine or surgery, as licenses to practise, ought to be abolished both in universities and corporations, and the corporations in London and Dublin ought to conjoin, as those of Edinburgh and Glasgow have already done, for the purpose of giving a double qualification to practise medicine and surgery.

As regards the second group of ideas—those relating to the *authorities* who ought to grant the licenses or qualifications to practise—there is a great deal more to be said, and much more than can be said now.

Some there are who profess to be somewhat indignant at the circumstance that a candidate may enter the medical profession through any one of nineteen portals. Why so many? say they. Why cannot we have but one portal to this great profession, so that doctors may be made like so many red herrings—any one as good as his neighbour? The one-portal dreamers for the most part live in London constantly, or, at all events, for a part of the year; and it is not difficult to understand why the one-portal scheme wears such an agreeable aspect for those who dwell in the chief city of the kingdom. The principal gate-keepers of this precious one portal would, sooner or later, be centralized in London. A committee of delegates from all parts of the country would of course assemble there to prepare examination papers, which would be sent to all parts of the country, and written examinations would be held everywhere at the same hour on the same day.

The papers of candidates would, of course, be sent to London. An arch-examiner in each subject would summon to his aid a number of experts, who would, for so much an hour, read and value the papers. Examiners would have to meet in London to consider and compare results, in order that undue severity or undue laxity on the part of any examiner might be prevented. The examiners from Scotland and Ireland would grow tired of numerous journeys to London. They would beg to be excused, and thus the examination of the candidates' papers would fall mainly into the hands of medical practitioners in London, greatly to the detriment of the schools of Scotland and Ireland. But meanwhile the difficulty would at once arise that the oral and practical examinations can only be carried out by a large body of examiners, with a great mass of material and appliances which can only be found in sufficient quantity in the medical schools and hospitals throughout the country; even supposing it could be found in London, students could not be expected to journey several times from Galway and Aberdeen to be examined in London. An oral examination being essential in every medical subject, with examiners so numerous and

so scattered as they must be, *efficiency* of examination would not be difficult, but *uniformity* impossible.

But as uniformity is the essential principle of the scheme, it follows that this one-portal idea is an *ignis fatuus* which may serve to allure, but which must inevitably lead to a quagmire. Germany tried a one-portal scheme, found it a complete failure, and was glad to abandon it for a twenty-portal scheme.

But in spite of the warning of that example, it came to pass not very long ago that the busybodies of medical London gathered themselves together and took counsel one of another. The medical mountain of London showed signs of much internal agitation. It quaked and trembled exceedingly, and at length brought forth a curious little mouse. It had a sly expression in its eye, a sharp expression in its teeth. Its head, however, was too small, its tail very much too long. Its body had a thin, hungry look about it, and altogether it was an ill-conditioned little mouse, the sight of which made one uncomfortable. No sooner did this hungry little mouse appear than it began to nibble audaciously at the doors of universities, and with a little more time it would have reached the malt and would have fattened thereon. Several traps had to be set for the artful little creature, and notwithstanding the sly expression of its eye, it was safely caught.

But to pass from metaphor—what London reformers recently proposed in their Bill of 1878 was this: Let us have—said they—three portals, one for each division of the kingdom; let the universities and corporations in each division furnish representatives to constitute a joint examining board, before which every medical candidate in that part of the kingdom must appear and pass a minimum examination in the essential subjects of medical science, after which he shall be called a Licentiate in Medicine, Surgery, and Midwifery, and be recognised as a legally qualified medical practitioner. Then, if a candidate should care for university honours, let him go to a university and pass another set of examinations on a higher level than those of the conjoint board, and thus obtain a degree to indicate his higher knowledge. But the degree so obtained shall not, as at present, be regarded as a legal qualification for medical practice, but merely as an ornamental appendage without any legal significance. According to these curious reformers, professedly desirous of elevating the medical profession, the stamp of mediocrity, in the shape of a diploma obtained from their proposed conjoint board, was to have been the only legal qualification to practise medicine and surgery. In other words, the London reformers would have said to you, These degrees of Bachelor of Medicine and Master of Surgery shall no longer entitle you to practise medicine and surgery. You must go and pass a set of lower level examinations, the examiners for which are to be appointed by the corporations, ere you can become practitioners. And for the privilege of passing the lower level examination you will, of course, have to pay a few

additional pounds, for you must not expect examiners to spend their time in testing your knowledge for nothing.

It would be difficult to imagine a scheme more vexatious. The University of London is a purely examining body. The best teachers in various schools are selected as its examiners, who are changed every five years. Any one acquainted with its examinations must acknowledge the folly of compelling its graduates to pass additional examinations on a level with those of the London College of Surgeons ere they can become legally qualified practitioners.

In each of the Scottish universities the examining body is a conjoint board of professors and an equal number of non-professional examiners selected from various schools in England and Scotland, and appointed by the University Courts. It would be curiously vexatious to tell the candidate who has passed the elaborate and searching examinations of our University that he must also pass an examination similar to that for the double diploma of the Colleges of Surgeons and Physicians of Edinburgh.

But that was not precisely the programme of the London reformers; what they wanted was, that every student should first pass the lower level examination, pay a sum of money, become a legally qualified practitioner of medicine, surgery, and midwifery, and then, if he cared for an ornament, he might pass the higher level examinations of a university, and pay for its degrees.

No one desirous of encouraging university education could ever have planned such a scheme, for its certain effect must have been to diminish medical study and graduation at universities, and in so doing it must have injured the best interests of the medical profession and of the public. Graduation at English universities would not have suffered to a great extent, for already the graduates are so few in number; but graduation in the universities of Scotland and Ireland must have suffered seriously. Had all the practitioners of Scotland been compelled to become legally qualified practitioners by passing a lower level examination than that of the universities, can any one be so foolish as to suppose that seventy per cent. of them would also have paid for the degrees of universities if these had been robbed of their powers as licenses to practise? It is also to be feared that had such a scheme been in operation the standard of examination in our universities could not have risen to what it now is. With the degrees robbed of their legally qualifying power for practice, and reduced to expensive ornaments, it would have been difficult to have resisted the tendency to let them be more easily obtained than they now can be. And while the universities suffered, who would have profited? In Scotland the corporations would certainly have got much of what the universities lost, and much of the money now devoted in universities to teaching purposes must have been devoted to the payment of many more examiners, who must have been called in on account of the double examinations of university stu-

dents. I wish nothing but good to the medical corporations of Scotland, but it is permissible to say, that inasmuch as the universities have done so much for medical education, it would be most unjust and most unwise to direct into the proposed channels much of the support which has enabled them to discharge their important function.

It is to be hoped that we shall hear no more of a triportal scheme of medical reform. Let universities and corporations stand apart. Let it be admitted that there ought to be two sets of portals through which the medical profession may be entered:—1. A set of university portals. Let each university be a separate portal, having for its examining board its professors, with an equal number of non-professional examiners approved by the Medical Council, if it can be shown that our University Courts have not faithfully discharged their duty in making the appointments. 2. A set of corporation portals, consisting of the conjoined corporations of London, those of Dublin, and those of Edinburgh and Glasgow. Let one-half of the examiners be nominated by the corporations, and the other half be subject to the approval of the Medical Council.

Let the subjects of examination at the corporation boards continue to be, as now, subject to the approval of the Medical Council, as those of the Scottish universities are both to the Medical and Privy Councils. Let the examinations and results be in the future, as in the past, open to the inspection of the Medical Council; and if the delegates of the Council believe any examination to be faulty, let them say so. Hitherto they have scarcely ever had any fault to find.

If these simple reforms were carried out, it could not fail to follow that while the universities which have done so much for medical education would not suffer, neither ought the corporations of necessity to suffer by the appointment of extra examiners and by double qualifications being rendered compulsory. Their efficiency would be increased, and they would not fail to retain the confidence of the profession and of the public.

It would probably not be difficult to carry these simple but important reforms, and it would be well to set aside the agitation for changes of a more radical character until these have received a fair trial.

And now, gentlemen, I fear lest I may have wearied you by the discussion of these complicated and rather vexing questions; but we are obliged to face them if we desire to guard the best interests of medical science, of the medical profession, and of the public. We leave you to judge whether we have acted towards you from mercenary motives, or whether we have striven to our utmost to provide you with a good medical education which will enable you to take a high place as practitioners of medicine.

We regret that it has not been your fortune to have had the advantage of those magnificent new University Buildings which

we owe to the munificence of a generous public, the thoughtful liberality of the Government, and the unceasing exertions of Principal Grant. We wish you could have studied in the spacious apartments which are to be entered by the Professor of Anatomy in October next; but we can only thank you for the patient and considerate manner in which you have submitted to inconveniences which your successors will probably never know. We wish for every one of you that prosperity which comes from a faithful discharge of your duty, and we bid you all an affectionate farewell.

ARTICLE II.—*On Tinea Imbricata, or Tokelau Ringworm.* By M-CALL ANDERSON, M.D., Professor of Clinical Medicine in the University of Glasgow.

IN the First Annual Report of the Samoan Medical Mission for 1868-69, kindly sent me by an old Glasgow student, Dr George A. Turner, that gentleman refers to a cutaneous affection under the name of herpes desquamans. It is called by the Samoans Lafa Tokelau or Tokelau ringworm, because it is said by them to have been imported from Tokelau, or Bowditch Island. To the latter place it seems to have been carried about ten years before that time by a copper-coloured man, said to be a native of Tamana, one of the Gilbert group. His name was Peter, and hence the disease was called Le Peta.

It is met with in both sexes and at all ages, and is markedly contagious; it is very much dreaded by the natives, so much so that when it seems to be commencing they frequently cut out the affected part or destroy it with the moxa. "It is," says Dr Turner, "a scaly disease—much more like Ichthyosis in its general appearance than any other disease with which I am acquainted. The scales, however, differ from those of Ichthyosis in that they are not disposed in squares. They run in concentric circles, and may be well represented by taking a sheet of stout cardboard and shaving the upper layer of it in such a way as to make it curl up in circles. The rings of desquamated cuticle are about a quarter of an inch apart." It is associated with heat and intense irritation, and Dr Turner adds that it is probably of parasitic nature, although he had not then succeeded in discovering any fungous growth, nor could he say anything very definite as to treatment.

The same disease, apparently, is described under the name of *Tinea imbricata* in an admirable pamphlet kindly forwarded to me a few months ago by Dr Patrick Manson. He tells us that it is principally met with in the Straits of Malacca or islands of the Malay Archipelago, or as an importation from these parts; and "it would appear that some peculiarity of climate is necessary for the ready spread of the disease from person to person."

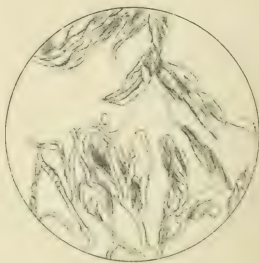
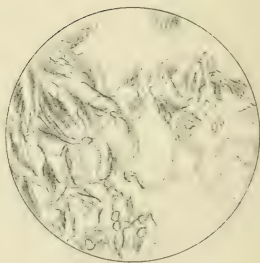
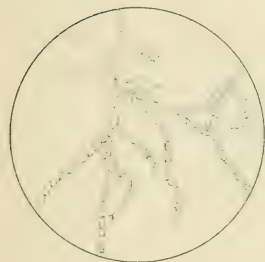
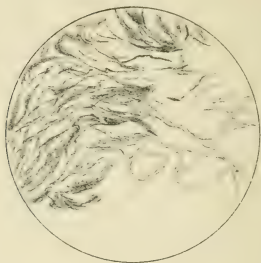
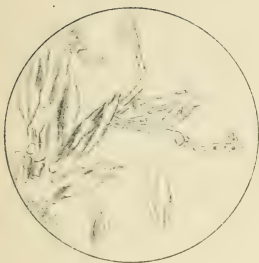


LAFI TOKELAU, BOWDITCH ISLAND RINGWORM, OR HERPES DESQUAMANS.

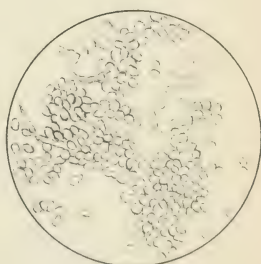
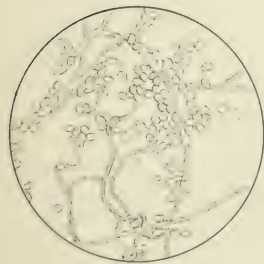
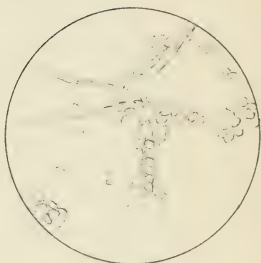
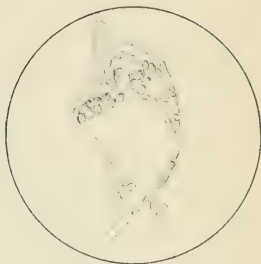
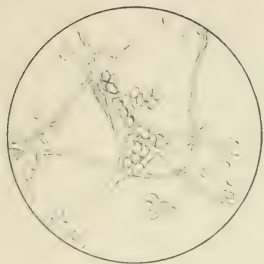
The disease extended up the arm, and in fact covered the whole body, excepting the head, fingers, and a patch between the shoulders.

TINEA IMBRICATA, 300 DIAM.

Epidermic scales.



TINEA IMBRICATA, 300 DIAM.



He has demonstrated its parasitic nature, and has favoured me with a specimen of the epithelial scales from one of his patients, from a portion of which the accompanying illustration was taken. He confirms Dr Turner's opinion as to its contagious nature, and has been successful in inoculating it in three cases. "After inoculation . . . there is an incubation period of about nine days. At the end of this time the fungus has multiplied sufficiently to slightly elevate the epidermis under which it is growing, and form a brown mass between it and the corium. When this has attained a diameter of about $\frac{3}{8}$ of an inch, the epidermis in the centre gives way; but as it is still organically continuous with the sound skin at its margin, it is not completely shed, but remains a fringe round the central hole. By friction or other means the free edge of the scale is from time to time removed; and the brown central fungus, and the tissues it is mixed with, now no longer protected by a closely adhering epidermis, are rubbed off as far as the attachment of the scale, and the exposed corium appears pale. Just beyond this point the advancing fungus shows through the epidermis as a brown rim, perhaps very slightly elevated, about $\frac{1}{16}$ of an inch in breadth. When the entire ring thus formed has attained a diameter of about half an inch, a brown patch is again seen to be forming at its centre; this in its turn also cracks the young epidermis over it, and a second ring is formed inside the first, which it follows in its extension. A third brown central patch is formed in the centre of the second circle, and behaves in exactly the same manner; and so on with a fourth, fifth, and never-ending series of concentric rings."

He believes ordinary ringworm (*Tinea trichophytina*) to be quite distinct from *Tinea imbricata*. The former attacks specially "those parts of the body which are usually covered with hair, as the scalp, axilla, and pubes; the latter, on the contrary, avoids these situations." The Chinese have very seldom a strong crop of hair on the front of the chest, on the small of the back, or legs and arms; yet these situations, so frequently covered with hair in the European, are, strange to say, shunned by the fungus of *Tinea imbricata*. If, however, *Tinea imbricata* has spread on to a hairy part, the hair follicles are not invaded by the fungus, as in *Tinea circinata*, and the hair continues firmly implanted, glossy, and natural.

Again, *Tinea imbricata*, if it has been in existence any length of time, involves a very large surface, as an entire limb or side of the trunk, or oftener still, if not checked, nearly the whole surface of the body. *Tinea circinata*, though sometimes including in its rings large areas, yet by its nature is hindered from attacking at one time the entire skin, as an interval must elapse before a second ring can follow the first. In point of fact, in *Tinea circinata*, though there may be several rings in existence at one time, and some of them include a very large area, yet we seldom have to deal with surfaces more than six inches in diameter, usually with much smaller.

The disease advances over the skin at about the rate of $\frac{1}{4}$ inch weekly; this is about the rate of progress in *Tinea circinata* also. As advancing rings spread, their regularity is modified by the shape of the parts, the nature of the skin they travel over, and by encountering other systems of rings. Thus after a time the plan is lost or obscured, while the pattern of the disease, so to speak, is everywhere preserved."

The following table shows the difference in the microscopical appearances in the two diseases:—

TINEA CIRCINATA.
(*Ringworm of the Body.*)

1. Involves the surface of the corium as well as the epidermis.
2. Fungus scanty.
3. Spores very scanty in proportion to mycelium.
4. Spores globular in form.
5. Mycelial threads generally short, with numerous swellings and constrictions, and other irregularities in outline.

TINEA IMBRICATA.

1. Does not extend deeper than the mucous layer of the epidermis.
2. Fungus present in very great abundance.
3. Chains of spores much more numerous than mycelial threads.
4. Spores about the same size, but oval, rectangular, or irregular, rarely globular.
5. Mycelial threads generally long, straight, or gently curved.

Let me add, in conclusion, that in my whole experience I have not met with an instance of this disease, and it is very probable that it has never made its appearance in this country.

The same disease, apparently, is described by Dr William Macgregor, chief medical officer at Fiji,¹ as having been met with by him there, though only amongst the foreign labourers from the Solomon Islands, the New Hebrides, and Line Islands, the Fijians and European residents escaping. This immunity of the Fijians may, he thinks, be due to the habit of the latter of frequently rubbing the body with cocoa-nut oil, though he has often met with *Tinea versicolor* on them. He also made out its parasitic nature, but his description of the fungus does not quite tally with that of Dr Manson, in so far as he maintains that "the filaments are much more abundant than in *Tinea circinata*, and the spores smaller and less numerous."

It thus appears that this disease is widely distributed over the islands of the Pacific Ocean, and is not so localized as Drs Turner and Manson suppose.

¹ *Glasgow Medical Journal*, July 1876, p. 343.

ARTICLE III.—*Report of and Observations upon two Cases of Puerperal Septicæmia.* By ANGUS MACDONALD, M.D., Lecturer on Midwifery and the Diseases of Women and Children, Medical School, Edinburgh; Physician and Clinical Lecturer on Diseases of Women, Royal Infirmary, etc., etc.

(Read before the Edinburgh Obstetrical Society, 14th July 1880.)

CASE I.—Jessie Munro, æt. 20, a pale, nervous girl, very much depressed in spirits, was admitted into the Royal Maternity Hospital and delivered February 19th, 1880. This confinement, her first, was natural and easy. The first stage lasted 6 hours, the second 20 minutes, and the third 18 minutes. The perineum was torn for $\frac{3}{4}$ of an inch. The presentation was a vertex, in the left occipito-anterior position. The child was a healthy female, weighed 7 lbs. 2 oz., and was $19\frac{1}{2}$ inches in length. Its head gave the following measurements:—Occipito-frontal diameter, $4\frac{3}{8}$ inches; occipito-mental, 5 inches; bitemporal, $3\frac{1}{8}$ inches; biparietal, $3\frac{1}{2}$ inches; suboccipito-bregmatic, $3\frac{1}{2}$ inches.

February 22d.—Patient had one or two rigors to-day, which were thought to be due to excitement on account of her child having been sent away. Liniment of belladonna was applied to the breast to check the secretion of milk, which was freely going on.

On 26th she got up a little; but on 27th considerable hæmorrhage occurred during the evening. Cold douche and ergot were employed, but they failed to arrest the flow. The hand was then introduced into the uterus, which was much dilated, and extended up to the umbilicus, and numerous clots were removed, as also a small firm piece of what appeared either partially organized clot or placenta. The uterus was then washed out with solution of carbolic acid. No further hæmorrhage ensued, but on the night of the 29th slight delirium came on, and the patient had several rigors; she also vomited, but complained of no pain. Her temperature in the evening had reached 105° , her pulse 140.

March 1st.—Slept well; had quinine 2 grs. every 2 hours, and aconite \mathfrak{Mj} . every 2 hours, port wine $\mathfrak{z}\mathfrak{v}$. during the night. The bowels were opened, and some nausea was complained of, wheezing and coarse crepitation were audible over both lungs posteriorly, but there was no dulness on percussion. She vomited several times. The morning temperature was $104^{\circ}6$; evening, $106^{\circ}2$. There was complete absence of abdominal pain and distention. Ten grains of quinine were administered at 6 P.M., and nutrients as before ordered.

March 2d.—Morning temperature, $103^{\circ}6$; evening, $104^{\circ}6$. Had quinine as before. The patient was removed to the side room by herself, and a special nurse placed in charge of her alone.

3d.—Patient became very delirious last evening, and got out of bed. No pain is complained of; her tongue is tolerably clean and

moist, and the bowels were opened spontaneously. Had rigors again at 4 P.M. Morning temperature, 102° ; evening, $104^{\circ}6$. Quinine was repeated.

4th.—Quinine repeated—5 grains four times in 24 hours.

5th.—Patient had a severe rigor again this morning. She had been delirious all night, and slept none. Yesterday the bowels were acting involuntarily. The tongue is tremulous, and dry in the centre. Morning temperature, $105^{\circ}4$; evening, 105° . A dose of morphia was given at night, in addition to the quinine.

6th.—No rigors occurred since yesterday. Morning and evening temperatures, 104° .

7th.—Slept well after two doses of $\frac{1}{2}$ gr. muriate of morphia. Bowels acted. Pulse very weak. Delirium almost constant.

8th.—On auscultation, crepitation was heard at both apices anteriorly, more distinct at right side. Pupils small. Had $\frac{2}{3}$ gr. morphia last night. At visit a vaginal examination was made, and it was noted that the cervix was somewhat swollen, but that the uterus was movable, not the least tender, and that the pelvis was free from any deposit of an inflammatory nature.

9th.—After the morphia the patient slept calmly. There has been considerable delirium since 7 A.M., but she is conscious if aroused. Bowels have not moved. Urine is passed in bed. Patient has had no quinine since the 7th. The tongue is dry. This morning she can swallow milk with difficulty. Nutrient enemata were administered every three hours.

10th.—Patient died.

Post-mortem, 11th March, performed by Dr Hamilton. The body was fairly nourished, the areolæ well marked, a bruise over left hip, complexion dark, pupils equal. Slight discharge from the vulva, no abdominal distention, no glandular enlargements. Both pleural cavities contained 3 oz. of serum, pericardium $\frac{1}{2}$ oz. Right and left side of heart contained a little fluid blood. Heart healthy.

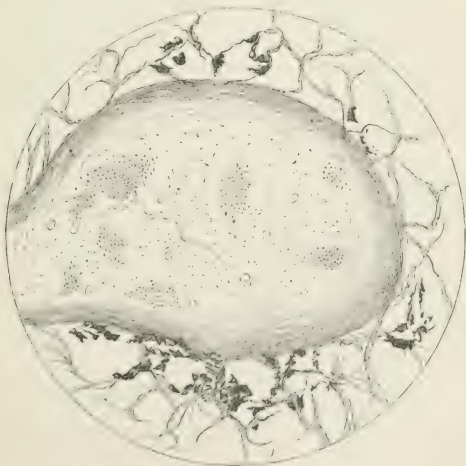
Left Lung.—No evidence of pleuritis; base greatly discoloured, of deep livid tint. Throughout the whole lung, more especially the lower lobe, there were large numbers of extremely minute grayish-yellow points. Besides these there were some larger nodules, almost miliary in size. There were also some wedge-shaped yellowish-coloured deposits at the periphery, immediately under the pleura. The smaller bronchi contained a large quantity of yellow catarrhal fluid. The lung was also extremely cedematous and congested. Right lung in a similar condition. Liver large and somewhat soft, but containing no deposits of any kind. Spleen contained large numbers of wedge-shaped yellow-coloured masses, with in one case a particularly yellow point in centre. Left kidney anæmic, but otherwise healthy. Right kidney the same.

Mesenteric Glands.—One enlarged to the size of a small walnut.

and on cutting into it was observed to be filled with gray-coloured, putty-like, caseous material. In mesentery around there were considerable numbers of tubercular points. The other mesenteric glands were also enlarged, but no caseation was found present in them. Small intestine, mucous membrane congested in some parts.

Uterus.—Mucous membrane greatly congested; os large, easily admitting the index finger: some bloody fluid exuded from it. At the fundus posteriorly a mass of firm tissue very much like placenta was found inseparably adherent to the uterine wall. No diphtheritic surface. Within the mass were numbers of large cavernous spaces, apparently bloodvessels or sinuses.

Microscopically.—The wedge-shaped portions in the lung proved to be groups of air-vessels filled with catarrhal secretion, in which masses of micrococci were present, in some places very abundantly. In a branch of the pulmonary artery there was observed a large mass of micrococci occupying the centre of its lumen, whilst the interior of its wall was lined by leucocytes. The accompanying woodcut represents the appearance presented by a section of another branch of the pulmonary artery after hardening in spirit viewed with a microscope magnifying 350 diameters. It will be observed that the interior of the vessel is crowded with extensive colonies of micrococci, seven distinct groups of varying size being visible in the section. The larger bodies with rounded outline seen in the field represent fat globules.



The lymphatic spaces round some of the branches of the pulmonary artery were filled with organisms. There was an oil or

fat embolus in one small vessel, and apparently portions of oil globules in some others.

As Dr Hamilton considered it possible that these oil globules had been the carriers of the septic mischief, and that the vascular uterine tumour might have been the medium by which it was absorbed, I returned him the uterus containing the small tumour for further investigation.

On June the 10th I received from him the following note regarding it:—

“The tumour which we found in the interior of the uterus at the fundus is a mass of fungating granulations. It is entirely composed of dilated vessels and granulating tissue. It is connected with the uterus alone. There are not any remains of placenta on the surface. The granulations appear to be very fatty, but further than this there is not anything of note. I cannot on the most careful examination discover any micrococcus. I am inclined to think that the point of entrance of the septic mischief must have been at another part, probably at the os.”

CASE II.—Janet Montgomery, aged 26, primipara, was admitted March 12th, and delivered March 13th, 1880. The first stage of her labour lasted 25 hours, the second stage 1 hour, and the third 10 minutes. The presentation was a vertex, in the left occipito-anterior position. The child, a male, was small, weighing $4\frac{3}{4}$ lbs., measuring 18 inches in length, and died eight days afterwards. The mother's pulse after delivery was 78.

On March 15th the discharge was found very putrid. The patient was put under chloroform, and Dr Macdonald inserted two or three fingers into the uterus. Several small shreds of membrane and a portion of placental tissue in a condition of extreme putrescence were removed. The uterus was then washed out with carbolic solution (1–40), and orders given that this should be repeated daily, and that the patient should receive $\bar{3}$ j. of ergot every four hours.

On March 16th the evening temperature ran up to 104° , and at night 5 grs. of quinine were given.

On March 17th the morning temp. was $103^{\circ}2$; evening, $103^{\circ}6$. Quinine $2\frac{1}{2}$ grs. every four hours were administered, and 10 grs. were given at 6.45 p.m. The patient was removed out of the large ward into one of the small side wards, where she was alone with a special nurse assigned her.

March 18th.—The uterus has been washed out thrice since yesterday's visit. The lochia are much less offensive. There is no headache, no pain anywhere. The bowels have been opened. The injections are to be discontinued. The morning temperature $103^{\circ}6$; evening, $100^{\circ}8$.

On March 19th patient felt better in the morning, her temperature then being $100^{\circ}2$; but in the evening it ran up to $104^{\circ}4$, when 10 grs. of quinine were given.

On March 20th the patient had a rigor for the first time. Her morning temperature was 101° ; evening, 102° . She had 5 grs. of quinine at night. At 10 P.M. she had a second rigor.

On March 21st her expression was found somewhat anxious, her right cheek flushed, her breathing somewhat shallow, 30 per minute, breath sounds feeble, and expiration prolonged at right apex. The cardiac second sound was slightly accentuated. The tongue was covered with a grayish-yellow fur, clean at the edges, and tremulous. The abdomen was slightly distended, but no pain whatever was complained of on the roughest manipulation. There was no increase of splenic or of hepatic dulness, nor was there any pain on pressure over the liver. The conjunctivæ were clear. There was no headache, but some deafness and tinnitus aurium. Lochia were coloured and ammoniacal. There was no erythematous or aphthous condition of the external genitals. There had been two slight tears at the outlet immediately inside the fourchette, but their edges appeared healthy. There was no smell of new-mown hay in the breath. She was ordered tinct. ferri perchlor. \mathfrak{M} xx., and potass. chlorat. grs. v. every two hours.

On March 22nd the abdomen was found rather distended, but no pain or tenderness was complained of; no rigors; milk still continued to be secreted in some quantity in the breasts. She had slept well the previous night, and had no vomiting. The tongue was cleaner. Wheezing was occasionally heard in the lungs, but no marked dulness was anywhere to be detected. Her morning temperature was $102^{\circ}8$; evening, $104^{\circ}6$.

March 23d.—Bowels had opened once, and were dark and liquid. Patient slept well. There is a good deal of cough to-day. Comparative dulness is found over the middle of the left lung posteriorly, and on auscultation coarse crepitation and wheezing can be heard in the same area. Half an ounce of port wine was ordered to be given every three hours.

March 24th.—Patient has had no rigor, slept well, but coughed severely. The pulse was feeble, the tongue slightly furred; crepitations were heard in the right lung both anteriorly and posteriorly, and the respirations numbered 60 per minute.

March 25th.—The patient had her chest poulticed during the night. She slept well, coughed less, and passed solid black stools. The sputum was frothy and tenacious, and brownish in one part. The respirations were 50 per minute. The tongue was moist and less tremulous, milk was present in the breasts, the abdomen was less distended, no enlargement of the uterus could be made out externally, and no pain was complained of on pressure over the abdomen anywhere. In the evening she was not so well; the cough was more troublesome and painful, and the respirations were 68 per minute. The pulse was 132, temperature $103^{\circ}2$. The tongue was thickly furred, with a tendency to become dry in the centre. Ordered quinine 10 grs., 20 minims of the tincture of the

perehloride of iron, with 15℥ of turpentine, to be given every three hours, and the poultices to be repeated. The chlorate of potash to be discontinued.

March 26th.—Patient passed a restless night. The tongue is still furred and tremulous. Dulness on percussion, and fine crepitations on auscultation are heard three inches below the right clavicle, while coarse crepitations are heard posteriorly at both bases, particularly the right. At the right apex posteriorly slightly tubular breathing and increased vocal resonance, but no crepitations, are heard. Ordered to omit the turpentine and give ammoniæ carbonatis gr. iv., syrupi scillæ 5j., every four hours, quinine 10 grs. at night. The iron to be continued as before.

March 27th.—The bowels had not opened for two days. The cough was less severe, and the patient slept well during the night.

March 28th.—The left lung is clearing slightly. The patient slept well, had a solid motion, and feels and looks much better. Treatment as before was ordered, with quinine 5 grs. at night.

March 29th.—Patient passed a good night; her breathing was easier and free from pain. Quinine 5 grs. at night.

March 30th.—Slept well and coughed less.

March 31st.—She passed a good night. On examination no bacteria were found in the sputum.

April 1st.—Considerable consolidation of the right lung posteriorly, especially at the apex, was found.

April 3d.—As the tongue became now very foul, the iron and also quinine were stopped, and an ounce of castor oil ordered. The cough mixture was continued.

April 4th.—The breath sounds are louder over the whole right lung. As the state of the tongue was not improved by the castor oil, a calomel powder was ordered, and this, followed by a saline, effected free movement of the bowels. Tongue somewhat cleaner.

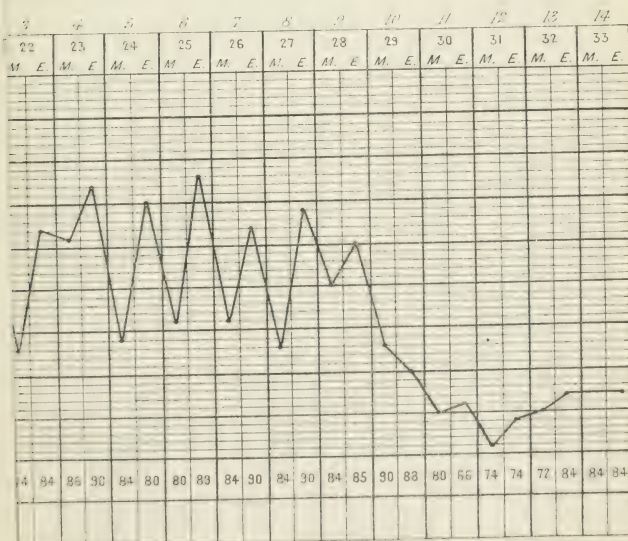
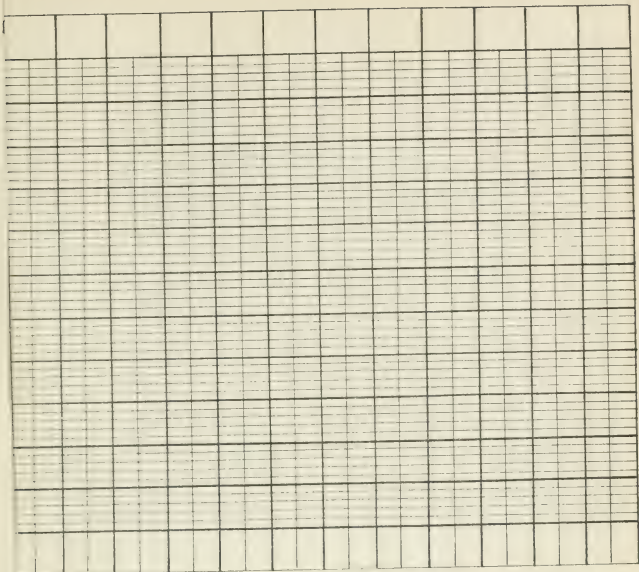
April 6th.—Temperature last night 103°; this morning, 100° 2. Ordered salicylate of soda gr. xx. every four hours.

April 7th.—Temperature last night 103° 6; this morning, 100° 2. Ordered salicylate of soda gr. xx. every two hours.

April 8th.—The bowels were opened last night. The breath is offensive. No deafness, but tinnitus aurium and giddiness is experienced a quarter of an hour after each dose of the salicylate. She vomited after one dose last night.

April 9th.—There is scarcely any cough. The salicylate is well marked in the urine, but there is no trace of it in the milk. From this time the temperature steadily fell, and the patient improved continuously, and the salicylate was only given thrice daily.

On April 16th, before leaving the Hospital, the patient was examined, and the following note of her condition taken:—



Per Vaginum.—Slight cicatricial contraction exists at the posterior edge of the vaginal outlet. The uterus is movable, and natural in size. A rounded, specially hard mass is felt on the right side of the uterus, closely connected with the pelvis externally, and abutting upon, but not especially connected with, the uterus mesially. This mass is fixed in position, and about the size of a goose's egg. Posteriorly and on the left the pelvis is clear. The free manipulation of this hard mass causes the patient no pain whatever. The uterus is perfectly well involuted; the cervix particularly natural. The sound still passes $3\frac{1}{2}$ inches.

The patient presented herself at ward 28, Royal Infirmary, on 28th April, when the following observation was recorded:—The uterus is normal and movable; a mass of stony hardness, about the size of a goose's egg, simulating an exostosis of the right side of the pelvis, is to be felt occupying the outer two-thirds of the right broad ligament.

June 1st.—The uterus is movable and natural. The hard mass on the right of the uterus is diminished to about half its former size. The hardness is scarcely so intense as on April 28th.

June 22nd.—Patient again presented herself at the Royal Infirmary. Feels now quite well. The pelvic hardening still present, but getting slowly less.

The two cases above recorded present points of sufficient interest to warrant me in assigning them a more full record than could be allowed in the Quarterly Report of the Maternity Hospital which I read at the last meeting of the Society, as only brief and fragmentary observations could have been bestowed upon them in that connexion. Accordingly, I contented myself with making a short reference to them on that occasion, and reserved most of my remarks for the present paper.

In starting, I would first remark upon the great similarity of the course which the two cases ran, and which is, I hold, sufficient to justify me in classifying them both under one heading. It is true that in the second case we subsequently found that there had been local pelvic inflammation in addition to the more general and the pulmonary symptoms. This peculiarity, however, can hardly be said to tend to the exclusion, but to the inclusion, of the case in the category of septicæmia. For it is more often the case that we have septicæmia after the case has continued for some time at least conjoined with, than disassociated from, pelvic inflammation.

I have named the cases septicæmia advisedly, because I regard puerperal fever as essentially a septicæmia which may assume various forms, according to the avenues by which the septic poison enters the blood, say whether it especially selects the veins or the lymphatics as the channels by which it passes, or according to the specially important organs it seizes upon, or the rate at which the poison is introduced into or is produced within the organism.

This view, that puerperal fever is essentially a result of the absorption of septic matter, was held by Willis, Denman,

Eisenmann, and others, but was first plainly and emphatically put before the profession by Semmelweiss in 1847, and seems to be the only view that agrees with the various facts of the case, and affords a groundwork on which to build a reliable prophylaxis and therapeutics of the disease.

Much harm appears to me to have resulted from regarding the disease as a specific fever analogous to typhus or typhoid fever, but subject to such terrible capabilities of communication that the best thing that could be done in the interests of one's other patients was, in a case of suspicion, to keep as far as possible from the sufferer, even though the latter's interests were thereby sacrificed or neglected. It also led to very impracticable teaching, such as, that if a man had a case of puerperal fever in his practice, he was bound to leave his practice for a month or longer period to get rid of the pestilence. I have even heard a grave physician argue that he believed that the perspiration of an accoucheur who attended a patient suffering from puerperal fever was charged with the poison, and would thereby communicate it to his patients. Many other equally absurd restrictions to the action of the obstetrician might be mentioned as unfairly put upon him by his brethren in surgical or medical practice, while they wink hard at equally dangerous possibilities in their own department. For instance, does a surgeon leave his practice for a month if he has a case of pyæmia or of erysipelas in his practice? Or does a pure physician refuse to examine the chest of a person unprotected by a previous attack of scarlet fever if he has seen a scarlet fever case on the same day?

Every one who knows anything of the terrible misery and misfortune that a single case of puerperal fever brings to all connected, will gladly do anything and everything that is provably necessary to avoid propagating the disease. The whole question turns upon what is necessary. But the conception of the ailment that looks upon the disease as a putrid wound fever at any rate supplies us, at the same time, with the expectation that extreme cleanliness and the use of antiseptics should enable us, in a case of puerperal fever, to do all that is fairly demanded of a doctor toward his patient without endangering our other patients' lives.

Considerable confusion of view has also arisen from the habit of speaking loosely of puerperal fever in its relations to zymotics, and to a very general belief that any of those zymotic diseases, such as scarlet fever, measles, typhoid, etc., might produce true puerperal fever.

Now, if I have learnt anything from reading, experience, and observation on this subject, it is that those diseases, though liable to assume very grave forms, and to be specially fatal in the lying-in period, yet retain their essential characteristics, and are still in actuality as well as in theory scarlet fever, or measles, or small-pox in the lying-in period.

(To be continued.)

ARTICLE IV.—*Upon the Causes, Prevention, and Treatment of Afterpains.* By JOHN E. RANKING, M.D., M.A. Oxon., Tunbridge Wells.

(Continued from page 115.)

2. *Connected with the Utero-Ovarian Nerves*—Pains after delivery, seated apparently in the nerve fibrils supplying the ovary, and those also which are situated between the folds of the broad ligament, are in certain persons by no means uncommon, and give rise to very great distress. It is of no little importance to recognise completely and early both the kind of pain under consideration, and also the neuralgic uterine pain of which we have just spoken. To the casual observer both present symptoms which closely resemble such serious complications as metritis and peritonitis; and it is, I think, most likely from pains of this kind, not recognised and ill-treated, that cases of puerperal inflammations have, as the authors declare, arisen. At any rate, the very great depression caused by the pain and consequent loss of sleep; by the diet of the lying-in room, always insufficient, and perhaps still more restricted because of the patient's symptoms; the already languid circulation and feeble nervous force which always obtains in the subjects of these pains; not to mention the effect of too often depressing remedies, cannot but favour sepsis. It is also to be remarked that the lochia in such cases are almost invariably fœtid.

Before examining the causes of these pains it will be well to consider the means whereby they may be distinguished from those which portend serious mischief; and for this purpose a description of the appearances presented will perhaps serve best. The patient lies supine, and the legs are usually straight; but if the pain is very severe or has lasted long, the knees may be flexed. The abdomen may be slightly tympanitic, especially in the hypogastric region, or only naturally distended, or even flaccid. There is great tenderness, and any attempt to manipulate the abdomen causes great alarm. If, however, by dint of constant assurances of great gentleness, examination is carefully made, the tenderness will generally be made out to be not very superficial, and most marked about the ovaries and uterus, deep pressure greatly increasing the pain. The lochia are unaltered, but, for constitutional reasons, are usually pale and scanty. The whole aspect, general condition, and history of the patient help greatly to reassure us. The pale, delicate face, without the anxious look which betrays serious disease (unless, indeed, the pain is long standing, and has been treated by depletive measures); the pallid, tremulous tongue; the weak, sharp pulse; the normal temperature—unless the pain has lasted long—all assist materially in the diagnosis. The patient has suffered much from neuralgia of various parts, especially the intercostal and ovarian nerves. The periods have been painful, the flow pale, or dark and scanty. The same sort of pain, perhaps, has been felt

during the pregnancy. Everything points to instability of the nervous system, due, it may be, to privation, to overwork, anxiety, and constitutional defect. The diagnostic symptoms in the early stage are—(1.) Normal temperature; (2.) Absence of rigors; (3.) Condition of pulse; (4.) History of patient.

The primary cause of this kind of pain after delivery is undoubtedly a general tendency to nerve-pain. The situation is in great measure determined by the heightened sensibility of the pelvic nerves consequent upon pregnancy and the puerperal state. This tendency is often fostered by loss of appetite and sleeplessness during pregnancy, by a tedious exhausting labour, by too meagre a diet after delivery, and last, but not least, by repeated, though futile, attempts to suckle the infant before the breasts begin to fill, causing not only sore nipples, but great general restlessness and disquiet. Another very frequent cause of excitement is pressure exerted by neighbouring organs upon the nerves themselves. Thus fecal matter in the cæcum or sigmoid flexure, or a distended bladder, may each give rise to or keep up pain of this kind. Again, very early assumption of the sitting posture is in these patients frequently followed by neuralgic pain, due apparently to dragging on the broad ligaments.

3. *Reflected Pain in the Cerebro-Spinal Nerves.*—The most interesting of all the phenomena following parturition are those which are observed sometimes either together with pains in the region of the uterus, or even independently of any such pain. That pain should be experienced in various branches of the cerebro-spinal system in consequence of the excitement of the pelvic organs does not seem very strange, when we remember the toothache often attendant upon pregnancy, the pain under the twelfth rib in many cases of uterine disturbance, and the pains in the thighs at the time of the menstrual period. In this category must be placed those pains which occur in the abdominal walls and in the lumbar and inguinal regions both before and after delivery. In some rarer cases, however, the effect upon the cerebro-spinal system takes the form of motor disturbances; and cramps and muscular spasms occur, sometimes coincident with, sometimes alternating with, uterine pain. M'Clintock and Hardy, and Fordyce Barker, have also observed this fact, and that the cramps have ceased after the expulsion of clots from the uterus. I have often obtained collateral evidence of these cramps arising from irritation of the uterine nerves, from the case of a lady under my care, in whom unusual distention of the uterine cavity by dysmenorrhœal membrane is attended by jactitation of both legs, which is so severe as completely to prevent sleep and induce considerable exhaustion. This is worst when the distention is at its height, and also immediately after the violent efforts by which the uterus expels its contents. It is open to question whether the coccydynia of which Dr Dewees speaks rightly comes under this head, or whether the pain is not local, and due to the bending of the coccyx during labour.

4. *Pains in Neighbouring Organs.*—Sometimes, when from any reason the urinary bladder has become distended after delivery, considerable pain results, which is entirely relieved by evacuating its contents. It is necessary, in examining every case of afterpains, to ascertain if the bladder be freely relieved. The rectum, also, may be the seat of pain, either from piles which are very sensitive, or from the pressure of feces or flatus, which, independently of the pressure they cause, and the reflex spasm which they evoke, excite pain in the bowel itself. The colon and small intestines are also very frequently indeed the seat of pain after delivery. In point of fact, pain which is really situated in the bowels, and due to flatus and colic (not necessarily accompanied by abdominal distention), is very often mistaken, both by the patient and nurse, for afterpains. The pain of the irregular contractions of the intestinal muscles excites, either reflexly or as part of the general contortions of the patient, contractions of the abdominal walls, which give a bearing-down character to the pain, which reminds the patient of some of the sensations during the second stage of labour, and elicits the description, “just like labour pains.” Any one who is subject to colic must recall the bearing-down, forcing nature of the pain when severe; how the diaphragm is fixed, and the abdominal walls contracted, involuntarily almost, as though to limit the agony and control the contortions of the bowels. Here the pains are “bearing-down,” not expulsive only. In many cases the sudden and complete change of diet to slops (generally in inordinate quantities) may have something to do with this. In this condition the bowels are not necessarily confined nor distended, and to rightly interpret the symptoms it is needful to consider any flatulent tendency which the patient may have; the time and circumstances of the onset of the pain; its position, whether localized or universal; its duration, and its effect upon the lochia and uterus. If the lochia be not, at least temporarily, increased by the pains; if no coagula pass; above all, if the uterus be not markedly diminished in size and tender after they have ceased, the pains are not uterine contractions.

SECTION V. *Prevention and Treatment of Afterpains.*—Employing the same method of division and order as in the former section, we shall first consider the treatment of

1. (A.) *Expulsive Afterpains.*—As was before said, some authors do not class these as true afterpains; and we must concede that in at least the greater number of cases in which they occur measures may easily be taken to prevent them altogether. There are, of course, some instances in which all the care which we may bestow will not prevent either the retention within the cavity of some part of the placenta or the formation of coagula, either from unavoidable atony of the uterus, or from excessive vascular tension. But, except in such cases, it is an indisputable fact that foreign bodies in the uterus need not, and therefore

should not occur. Post-partum coagula are most prone to form in the case of women of the lower class whose pregnancies are frequent, and who have to assist in the maintenance of a large family. The constant struggle with poverty, prolonged lactation, domestic anxieties, and the short period of rest in bed after delivery, coupled with the enervating influences of overcrowded, unwholesome dwellings, all tend to lower their nerve-force and deprave all their bodily functions. To these women, who invariably leave their bed after the ninth day, it must make a vast difference whether diminution in size and vascularity of the uterus goes on steadily and painlessly from the first, or whether two or three days of their already too short convalescence have been spent in expelling coagula which need never have formed, with the inevitable accompaniments of pain and sleeplessness.

Prevention, then, consists in exerting any influence which we can upon the various stages of labour. Our power in this respect is very slight and confined to the second and third stages. The object is to ensure firm contraction which shall last long enough to allow durable thrombi to form in the mouths of the uterine vessels, and furthermore so to regulate the patient's surroundings that the fall of vascular tension which almost invariably succeeds delivery shall not be too rapidly disturbed. The object, then, is twofold:—(1.) Efficient contraction; (2.) Vascular tranquillity.

Nature's mode of ensuring efficient contraction is, as has been shown, by affording a due proportion of rest to the uterine fibre. This may be imitated, or rather not disturbed, by avoiding all hurry in the management of the later stages of labour, especially the third. The placenta must not be hurriedly expressed nor withdrawn; but we must wait until a renewed and vigorous throes shows that the organ is ready to resume contraction. The hand, after expressing the placenta, should continue to grasp the uterus firmly, yet gently, for some time; and the binder should not be applied until we are satisfied that the organ has no tendency to relax. In some other cases (and these occur most commonly among the poorer classes), in which, either from the history of previous labours or from any other circumstance, we have reason to suspect great want of uterine tone, or when on former occasions we have found manual compression insufficient, we have a most powerful ally in ergot.

Crozat, Velpeau, and Cazeaux all speak very strongly of the value of ergot in preventing afterpains, and Playfair also mentions its use. There can, however, be no doubt that its worth for this purpose is not widely recognised. The fact that ergot should practically have fallen into disuse in the treatment of afterpains is not improbably due to a want of distinction as to the exact conditions to which it is applicable and the period at which it is indicated. There are, for instance, numbers of persons who suffer horrible tortures from afterpains, but to give them ergot is only to increase their agony fourfold:

and why? Simply because the pain is not expulsive, but spasmodic, and due not to the presence of intrauterine coagula, but to uterine hyperæsthesia. Ergot is only useful in those cases where relaxation of uterine fibre allows bleeding from the vessels, and then only as a preventive. In very obstinate cases the addition of liquor strychniæ ℥v. is very useful.

The time at which it is best given next claims notice. Here let me disclaim most distinctly any wish to put forward ergot in opposition to the use of forceps. The object in view is not attained at delivery, but then only begins to be realized. Upon an average of cases we may say that a full dose of ergot (extract. liquid. ʒj.—ʒiij.) will begin to operate in from ten to fifteen minutes from the time of administration; but as in some cases its effects are immediately apparent, it must never be given if any obstacle to immediate delivery be present. My rule, then, is to give ʒj. or ʒiij. when, as far as one can judge, delivery will be naturally accomplished in about fifteen minutes. By this means, if the above-mentioned limitation be strictly observed, no undue strain can be put upon the maternal structures, nor perilous pressure upon the fœtus, and persistent contraction of the uterine fibre only occurs when no harm is possible.

I have not found its administration after the expulsion of the fœtus to be nearly so serviceable, even when accompanied by manual compression, which should in no case be omitted. The difference may perhaps be partially accounted for by the difficulty of maintaining complete rest. A natural degree of vascular tranquillity is a *sine quâ non* of success, the importance of which has been forced upon me by failures which might be distinctly traced to vascular excitement. In cases such as I have instanced elsewhere the vascular tension has not fallen perceptibly, or has soon risen again in spite of all precautions. In these ergot has quite failed in preventing coagulation within the uterus. The cases, however, in which this state may be easily ensured are common enough, and vascular excitement is too often the result of want of care. Thus a patient is perhaps hauled from the foot to the head of the bed, or from one side to the other, not to mention the vile practice among the poorest of turning back the bed and being delivered on the sacking, frequently with all the clothes on. The moving which thus becomes necessary cannot be effected without raising arterial tension considerably, and at any rate quite sufficiently (as I have often seen) to nullify the firmest uterine contraction.

Another source of failure is administration of alcoholic stimulants during or soon after delivery. To ensure the necessary vascular tranquillity,—so necessary that with it, in favourable cases, uterine tonus is alone sufficient, without it our strongest means are unavailing,—we must (1.) Never allow the patient to move herself, nor move her except by gentle and efficient lifting. (2.) Never, except under absolute necessity, give alcoholic stimulants during or

immediately after labour. The rule, which is so often urged in writing about post-partum hæmorrhage, never to be too hasty in attempts to rally the patient from the faintness which is but assisting nature, applies here with equal force. (3.) Avoid all occasions of excitement and emotion. In cases where it is possible to adopt measures for the improvement of nutrition and tone, both of the uterus and the general system, either in the intervals between successive impregnations or during the pregnancy, these should undoubtedly be employed. If, however, coagula have formed, our object must, of course, be to favour expulsion, and the sooner the better. For this purpose the best method, if it can be practised, is *digital extraction*. If this be impossible, we are driven to the use of anodynes, not only to soothe the pain until the process is accomplished, but to assist in relaxing the cervical fibres. *Chloral* in one full dose, or, better, in smaller doses at frequent intervals, is often effectual; 15 or 20 grains, repeated at intervals of about twenty minutes for three times, is a suitable dose. *Opium* has been used from time immemorial; but the dose required is often enormous. *Nitrate of amyl* would perhaps prove useful, as Dr Barnes has found it instantaneously beneficial in relaxing tetanus of the uterus. It must, however, be borne in mind that its use soon after delivery has been followed by flooding. *Chloroform* has no advantages over chloral. With either of these ergot may be given; but as the distress is due not to insufficient action, but to increased resistance, it will be rarely necessary. Indeed, it has not seemed to me to produce any such good effects as to counterbalance the additional pain inflicted. The same remark applies to friction over the uterus. *Purgation*, especially if brisk, is very useful in aiding expulsion of coagula; and of all purgatives, castor-oil, with or without opium, is the best, if its use be not contraindicated by the presence of piles. The compound scammony pill is also a very elegant and most effective purge. Whether the effect is due to any power of exciting uterine contraction (which some would attribute to castor-oil), or to the relaxation accompanying purgative action, is beside the question.

(B.) *Spasmodic Afterpains*.—The condition of the uterine fibre upon which these depend appears to be so entirely an expression of a general constitutional habit that prevention, in the sense of obviation of the primary cause, is entirely out of the question. So closely are they bound up with neuralgic afterpains that we may very well consider their treatment together, as any remarks in most cases will apply equally to both. We must, however, make this limitation, that whereas no antecedent treatment will obviate nor apparently mitigate, in any great degree, spasmodic pains, proper and well-directed treatment during pregnancy is most effectual in preventing neuralgic pain in the uterus after delivery. What this treatment should be will be considered fully when discussing the ovarian form.

Spasmodic affections of the uterus, as of other organs, though often occurring without any apparent cause, are very much increased by any condition, either local or remote, which excites or tends to heighten reflex irritability. Thus the increased local excitement consequent upon chronic metritis, irritable uterus, hyperæsthesia during pregnancy, hypogastric pains during pregnancy, a clot in the vagina which impinges upon without invading the cervix, may in each case give rise to very great pain. Again, retention of urine, or feces or flatus in the intestines, and especially tender or sore nipples, will excite the same trouble.

Preventive treatment, therefore, consists in taking care that all possible causes of irritation, both local and distant, be as far as may be removed. Foremost of all stands the precaution that the uterus contract efficiently *ab initio*; for, in persons disposed to these pains, they are doubly troublesome if the cavity has been distended. The best modes of ensuring this are manual compression, and especially by never allowing the uterus to spend its own and the patient's strength in fruitless, unavailing efforts. This is to be prevented by judicious use of sedatives in the early stages, and by instrumental aid during the later stages of labour. The care which is directed to a long and thorough preparation of the nipples for the office which they must fulfil will be well repaid, and careful regulation of the bowels will also be of service. A suitable dietary is another very efficient means of lessening suffering from these pains. The fact that they are known to be habitual should always prompt us to order a very liberal diet from the first. Thus many a patient who, upon a light and only moderately nutritious diet, is in sleepless agony for four or five days, will, if given a chop and a proper amount of her usual stimulant within twenty-four hours after delivery, be free of pain altogether by the third day. Sleeplessness is not only potent to perpetuate these pains, but will sometimes encourage their onset. One or two bad nights, especially if combined with the regulation starvation (which is still far too common) or with sore nipples, will often bring on these pains three or four days after delivery, even when they have up to that time been absent. By means such as these we may hope, if not entirely to avert, at least to diminish the suffering which the patient must undergo.

Curative Treatment.—Premising that, whatever means we may adopt for cure, the preventive measures just indicated must in all cases form part of the treatment, we pass on to consider the various drugs which are more or less useful in different instances. Here we are met by the real difficulty of the problem, to which we owe such frequent failures. The spasmodic contractions are caused directly, at any rate in the greater number, by the ganglia which reside within the uterine walls themselves; and until we know of some drug which will control the activity of these, without also affecting the whole organism, the medicinal aspect of the question must be unsatisfactory. The various drugs which are most suitable

are, chloral, bromides, morphia, atropia, henbane, camphor, cannabis indica, conia, gelseminum, quinine. These may be employed both internally or as external applications. It is hard to say which is most generally useful, one often succeeding where another has failed; but in estimating the value of any one of them it is needful to remember that, except in very severe cases, the pain usually disappears naturally about the fourth or fifth day. In treating these cases I have, as much as might be, avoided opium and its derivatives, with the view of finding, if possible, some anodyne more permanent in its effects, and causing less disturbance of the general functions. When the pains are distinctly spasmodic, I have found great benefit from gelseminum, but the dose must be large (5j. of tincture). In some cases, distressing pain has given place speedily to quiet sleep; and on one occasion three doses were taken at intervals of four hours with complete and permanent relief of pain; the only unpleasant symptom being a degree of diplopia. *Conia*, in suppositories containing one grain, has been of great use, repeated every four hours. I have never known more than two necessary. The effects of these two drugs have seemed more permanent than that of the others. Where the pain is less distinctly spasmodic, but is characterized by constant aching and tenderness in the womb, I think I have seen very good results from quinine and hydrobromic acid, with a liniment of aconite, belladonna, and chloroform on spongio-piline or wool covered by oiled silk. Very severe pain yields quicker to full doses of quinine—4 or 5 grains every four hours, with or without belladonna.

The rectum is the best medium for administering any drugs which are applicable to that method.

Our aim, if we wish to avoid or mitigate these pains, must be to endeavour to correct any unhealthy state of the womb by furthering involution, later by proper treatment and by obtaining as long a period of rest for the organ as possible; during pregnancy, by preserving a high standard of health and removing causes which tend to lower nerve force; during labour, by husbanding the strength both of the uterus and patient, by securing for both proper intervals of rest, by giving support in the form of strong soups, or meat if it can be taken, and by rendering mechanical assistance as soon as it can fairly be done, if labour threaten to become lingering, without waiting for actual inertia to supervene; after delivery, by ensuring efficient contraction by gentle means, by obtaining complete rest, local and general, and by inducing sleep as soon after as may seem fit. Chloral is far better than opium for this purpose, and among other reasons not the least is, that it does not prevent (as opium) uterine contraction. It is also advisable not to apply the child too early to the breast, for if it sucks vigorously before milk is secreted great pain often results, or an irritable condition is induced in which the uterus and its nerves are not slow to participate. If the interval between delivery

and the first flow of colostrum be employed in obtaining quiet and sleep for the mother, and in giving as much nourishment in any form as she can take, avoiding excess of fluids, when the breasts fill and the child begins to draw the nipple, the uterine contractions which result will be in most cases unperceived, or, at most, the pain will never be so great as to disturb sleep.

Rheumatic Afterpains will probably respond best to anodynes externally, with salicin or salicylate of soda and quinine internally, and the avoidance of the sources of irritation before mentioned.

2. *Afterpains connected with Utero-Ovarian Nerves.*—This pain is a genuine neuralgia of the pelvic nerves, and any treatment, be its object the prevention or the cure of the pain, must, if it is to be successful, be based upon this understanding. The patients who are most prone to suffer from these pains belong especially to that class whose physical defect lies in their nervous system. They are rarely quite free from all aches and pains, but suffer chiefly from spine-ache with tenderness on pressure over the vertebræ; from pain in the ovarian regions, especially the left; from intercostal neuralgia, mammary pains, migraine, and such like. In them a sensation which in another escapes notice is pain, ordinary pain is agony. Many doubtless wilfully or unconsciously exaggerate, but as many more bear abundant witness to the reality of their suffering in their general condition. The pains which they suffer are identical with those they have felt before at the menstrual period, or when their tide of health was rather lower than usual, and depends upon the same cause, pelvic excitement. They undoubtedly require identical treatment. A girl who has thus suffered before marriage is, save in some exceptional cases where marriage itself or diversions attending it remove the depraved nervous condition, almost sure to suffer during pregnancy and after delivery, even though it be her first conception. Careful treatment during pregnancy is in all these cases well repaid. Our one aim must be to combat the constitutional defect by all the adjuncts of change of scene, exercise in the open air, and any means of raising the tone both of nerve and muscle. "Early to bed" is indispensable. Everything is to be avoided which tends to excite or depress the nervous system. Local pain and discomfort is to be avoided by the use of well-fitting belts to prevent dragging on the broad ligaments, and by passing a part of every day recumbent upon a couch or bed raised at the foot. Irritability or uncertainty of temper, which is very commonly present, responds best to the use of the bromides. These also, as well as hot applications to the abdomen, best control too vigorous fetal movements. If pain be present, and a tonic seems necessary, zinc, valerian, bromides, phosphorus, quinine, or bark, with hydrobromic acid, conia, etc., and other sedatives, will be most useful, and in some cases iron, especially if the periods have been pale before marriage. The four great requirements are food, sleep, local rest, and absence of

all disturbing influences. Treatment during labour and after must be on almost the same lines as for spasmodic pains; quinine and sedative liniments are especially useful. Where from the nature of the labour much general stiffness is to be expected, I think I have seen good results from use of tinct. arnica. ℥x. after delivery. It is surprising in how many of these cases a small faecal accumulation helps to keep up the pain, a contingency which should always be kept in mind.

3. *Disturbances of the Cerebro-Spinal System* do not admit of any special treatment, be they motor or sensory. Quinine and morphia are most frequently useful.

4. *Pains in the Rectum or Bladder* only demand notice here to impress upon us the necessity of ascertaining that pain is not dependent upon their imperfect evacuation. Intestinal flatulent distention, however, requires closer attention. As has been said before, there can be no doubt that, especially in persons with pendulous abdomens, the ordinary diet of the lying-in room, consisting, as it too often does during the earlier days, of slops in inordinate quantities, is chiefly to blame for this. Some blame must also be given to want of support to the abdominal walls before, and inefficient bandaging after labour. Patients who are disposed to suffer thus should have a generous diet, with very little more liquid than they usually take, and should be securely bandaged so as to exert firm and evenly-distributed pressure upon the intestines. If flatus accumulate, antispasmodics may be given by the mouth, or an enema of turpentine and assafetida, whilst constipation, if present, must be corrected. If the pain be excessive, morphia hypodermically will best relieve it whilst curative means are in course of trial. Poultices with mustard or fomentations with turpentine, followed by laudanum on cotton wool, often give great relief.

ARTICLE V.—*Scarlet Fever in the Puerperium.* By D. M'RAIL, F.R.C.S.E., etc., Greenock.

THE occurrence of scarlet fever, whether in puerperium, parturition, or the puerperal state, has been, and still remains, a source of anxiety to the practitioner. During pregnancy the patient is sure to miscarry, and her recovery thereafter will be doubtful. Cases of this kind do recover, though a decided prognosis cannot be given at the very time. Even in the infected districts where pregnant women completely resist the disease, abortions are rife, though not usually followed by untoward consequences.

When the disease makes its attack at the commencement of parturition, the wave of labour is broken off at the crest, so that a complete undulation is not being accomplished. Here, though the latter half of the wave is lost, the os will dilate, but the vagina

and perineum shall undergo no perceptible change, so that to effect delivery instrumental aid will become necessary, and if the patient happen to be a primipara, the soft parts must suffer; but whatever be the circumstances, life will be in great jeopardy, though in a less degree than in cases where the malady makes its first appearance a few days after delivery, when it is apt to assume the toxic form which affords no room for treatment.

There is a certain class of patients of which, as a rule, we may favourably prognose in scarlet fever during pregnancy, namely, that in which the fear of death gives place to the desire of hiding shame. Patients of this sort do abort, but generally recover under treatment. In any case, hæmorrhage comes on rapidly and excessively, and the early and judicious administration of internal astringents, combined with sedatives, will prove serviceable.

As an example of scarlet fever during parturition, I beg to submit a brief account of a case which occurred in my practice in the autumn of 1875. The patient, Mrs M.L., Greenock, well-built and healthy, æt. 28, a primipara, after being twelve hours in labour had the os fully dilated. The half-wave labour still continuing, and no physiological change taking place in the soft parts at the outlet, I waited for other twelve hours, and finding no advancing progress made, I delivered by means of Simpson's forceps. The perineum gave way right through the raphe—a worse state of matters than when the rent is oblique—and as it was late in the night, and there were no appliances at hand, the laceration was not stitched on the spot. On my next visit, which was on the following day, I found the patient complaining of thirst and a little soreness of the throat, and further examination showed that she was covered all over with scarlatinal rash, and had a temperature of 103° Fahr. This state of matters, which took me by surprise, seeing there was no scarlet fever in the vicinity, the characteristic abnormality of the labour might have led a more experienced physician to anticipate. The rash was darker than usual, and the fauces looked bluish-red; the lochia were normal. Ordered 12 grains of potassium chloride dissolved in water, to be taken every four hours—a salt which appears to perform the same good offices within as chlorine itself does without, namely, those of preventing and destroying kakogenesis of molecules or morbid aggregation of them. Next day patient complained of severe pain in the hypogastrium, stating also that the discharge had ceased. The uterus was hard to the touch, and slight pressure applied over it elicited severe pain. The vagina and torn edges of the perineum were covered with diphtheria, but the throat escaped this all along. Ordered turpentine with hot poultices over uterus, the vagina to be washed out with a weak solution of permanganate of potash lukewarm, and a dressing of the same to be applied over the visible diphtheritic patches, and the following—R Sub. mur. hyd., gr. i., Pulv. opii, gr. i.; Quin. sulph., gr. i.; Ext. hyosci., gr. i.; Ext.

bellad., gr. $\frac{1}{4}$. Fiat pilula et mitte tales xii.; Sig. una pill. 6tâ quâque horâ; the chlorate of potash to be continued. The temperature at any stage of the disease did not exceed 105° Fahr. About the eighth day the uterine inflammation began to subside, and the lochia appeared, but four or five weeks had passed before I could venture to give any favourable opinion. After the first desquamation, which consisted of thick patches and moulds, there succeeded a secondary rash with petechiæ and high fever, followed by desquamation as before. A tertiary and a quaternary fever followed in succession, with their respective moultings, but thinner scales. The patient recovered after suffering in the manner stated for nearly twelve weeks. She got up on the twelfth week, and has given birth to three children since. The first child took the fever on the seventh day, and died on the tenth after its birth.

My experience of scarlet fever after parturition, *i.e.*, in the puerperal or lying-in state, has been most disheartening. Let me adduce two examples. In October 1873 I was requested to attend a gentleman's family (Mr P., Greenock), who suffered from scarlet fever. When I reached the spot, I discovered that Mrs P., who had recently been delivered, lay in a concealed bed with her suckling, in the same room that her three older children were lying in scarlet fever. After much persuasion I succeeded in isolating two of the children, but the third she would not let out of her sight, though she was warned of the danger, as the child took the malignant form of the disease. In the course of ten days the midwife who attended Mrs P. came early in the morning, announcing that her patient had taken the fever. When I got to the house and saw Mrs P., who looked as if she had swallowed a cupful of poison, I felt certain she had contracted the toxic form of scarlet fever. I advised her husband of the danger, and requested him to call Dr Richmond in consultation, on account of his superior skill and extensive experience in obstetric matters. When the doctor arrived he took the same view of the case as I did, and decided that after two hours we should meet in the house again to determine on some other remedy, should the solution of acetate of ammonia with excess of carbonate which I prescribed in the morning fail to benefit. On our way to the house at the appointed time we learned that the patient had died. The toxic attack was observed about 6 A.M., and death took place at 1.30 P.M. The appearance of the patient is easy to remember, not so to describe. The countenance was anxious and tumid, and lividity bespangled with a dark-reddish rash pervaded the whole body; the nails of the toes and fingers were dark blue, and the forearms were covered with cutis anserina. She was conscious to the last. Her infant daughter, who was sucking her to the day of the mother's death, escaped the disease, and is living to this day.

On the 13th of January 1876 I was called in consultation with

Dr J. K. Robertson of this town over a Mrs M., who gave birth to a child on the 10th December 1875, and was progressing favourably till the 21st of the month, when scarlet fever made its appearance. On examination the patient was found to be ascitic and anasarcaous, accompanied by cedema pulmonum and a thick diphtheritic coating of the throat and vagina. We pronounced the case to be hopeless, and death took place in a few hours.

Of hapless cases any amount might be recorded, but it is from the study of the successful ones, and the means employed in them, that we shall eventually become able to cope with those that are desperate.

ARTICLE VI.—*Overpopulation and its Proposed Treatment by Lessening the Birth-Rate.* By F. P. ATKINSON, M.D., late Surgeon, St Bartholomew's Hospital, Chatham.

THERE can be no question that Great Britain, in common with other countries, has for the last three, four, or five years been passing through a time of severe commercial trial. Our mills, our mines, and great numbers of our labouring population have been standing idle, and the outlook on all sides, until lately, has been dark in the extreme. The followers of Malthus have not been slow in availing themselves of the opportunity thus offered of attributing our distress to overpopulation. They say that if the increase of population were limited, all would be able to find employment and the means of support in their own country; the poorest stratum of society would have comfort and health; marriage would be more frequent; prostitution would be almost entirely put a stop to. Now, "that poverty and misery are to be found in our large cities," says a writer in *The Standard*, "there can be no question. We admit that among the masses there is more or less a struggle for existence. A poor man with a large family may appear to many people a melancholy spectacle; but we must look a little further than this. If a man cannot find a living in England, it is simply a law of nature that he should go elsewhere. Poverty and overcrowding are substantially impelling forces to drive men farther afield. The migratory principle is essential to the advancement of the human race; and whilst it affords a means of relief to an overcrowded community, it benefits all by the encouragement it gives to commerce." "It has been urged on behalf of the Poor," says *The Natal Witness* of 14th September 1878, "that he is essentially a child of the soil, that he is attached to the land, on the produce of which he is content to live, and that his children inheriting after him will form the backbone of the future population of South Africa. It seems to be forgotten, however, that this quality, while it may provide for the stability of a population, is directly opposed to all improvements, without which a high state of civilisation must ever remain an unfulfilled dream. The man who

lives on the produce of his farm is in no particular need of roads; his wants are so few that he can give no great encouragement to commerce; and for the same reason he has no inducement to raise stock or produce beyond what is necessary for his own consumption. Bridges he does not require, for he need never wish to cross a river when it is in flood; and being without bridges and available means of transport, the mineral wealth under his feet lies unconsidered and untouched. Such an influence as this could never be an active influence in forwarding civilisation." The *République Française* has lately published a series of elaborate statistics which show conclusively that the population of France has been steadily on the decline for the last two hundred years—a state of things which it thinks deplorable. It considers that the rapid increase of population is not only an element of military strength, productive power, and intellectual superiority, but points out that one of the consequences of this waning population is dearth of labour. France has to import, at considerable expense, labourers from Belgium and Italy for agricultural and industrial purposes. The cause of the evil, it asserts, is to be found in the fact that French marriages are unfruitful, and it is a serious danger for the political and military power of the country. The Consul Général of the Rhône Department, painfully impressed by the falling off in the matrimonial returns recorded within the limits of its jurisdiction, has lately passed a somewhat startling resolution, of which the following is a brief abridgment:—"Considering that celibacy is *contra naturam*, and that Providence has prescribed to all existing human beings the ordinance that they shall be born, procreate their species, and die; considering it is the bachelors who offend all the States of Europe with corrupt views and immoral tendencies; it is hereby decreed that the support of forsaken children shall be defrayed by the deduction of one-fourth from the salary or pension of every official or pensioner who is unmarried and resident in the Department of the Rhône, from the humblest to the most exalted employé who belongs or has belonged to the army, magistrature, or any other branch of the public administration." As against the statement that if the birth-rate were lessened all would be able to find employment and means of support in their own country, it was stated before the Senatorial Committee appointed last year to inquire into the existing distress in France, that 5000 workmen specially employed in the manufacture of articles de Paris had emigrated in the course of the previous six months. Again, Mr Macdonald, M.P., when presiding at the Miners' National Union, said that, depressed as was the iron trade of this country, the depression was greater in America, while there had also been severe pressure felt in Belgium, France, and Germany; and as regarded the coal trade, nearly half the producing power in America was idle, and in France, Germany, and Belgium it was greatly curtailed.

"To urge," says Professor Bain, "that there is sufficient poverty and toil in the world without bringing in more to share it than can be provided for, implies either begging the question at issue—a direct imputation that the world is at present very badly managed—or that all persons should take it upon themselves to say how much poverty and toil will exist in any part of the world in the future, or limit the productiveness of any race, because inadequate means of feeding, clothing, or employing them may be adopted in that part of time sometimes called unborn eternity. As a rule, the result usually has been, limit the increase of population without adequate cause, and the reaction causes deterioration or annihilation."

The idea of increasing the wealth by diminishing the increase of the population is to my mind very much like that of raising prices by diminishing production, and Lord Justice Bramwell's remarks upon the latter are well worth attention. He says, "Without preaching any hateful selfishness, I must say I think the best way of promoting the world's happiness is for each man, at least in the first place, to seek his own. But that consideration would make other producers, if they would gain thereby, do the same thing, viz., diminish production. Then suppose we had less coal, less iron, less cotton, less wheat, fewer shoes, hats, and coats, less of everything, the price of each would rise, unless, indeed, we had less gold, which I think very likely; but would the world, or any portion of it, be better off than before? The miner would take nine-tenths of his former production or its price to market, and expect to get the same value as before. But he would find that those who dealt with him, like himself, had only nine-tenths of the former production to dispose of to him. It is said that this diminished production is only to be temporary, that prices are to be got up, and when got up, then production to the old extent is to be resumed. This seems to me as reasonable as though some one should say, 'Build a tower and put a house on the top, then take away the tower, and you will have a castle in the air.' What has made the price rise? Diminished production. Take that away, and down it goes. The people who could not afford to buy more and raise the price still higher when production was diminished will be equally unable to do so when it is increased."

It has been asserted of late that large families are one of the chief causes of the drunkenness prevailing among the lower classes in England; but no evidence has been brought forward to prove that those who are married and have extra responsibilities are more addicted to this vice than those who are single. If, however, this assertion be correct, alcoholization ought certainly to be on the decrease in France, where the population is actually diminishing. But what do we really find? I quote from a letter of the *Daily Telegraph's* Paris correspondent, dated 20th Nov. 1879:—"It has been remarked that although *cafés* are to be seen from time to time shut, they are invariably replaced by the ordinary wine-shop. This

is the case even in the wealthy quarters of the town, as well as in the newly-built quarters. The modern wine-shop is often as luxurious as the *café*; the only difference is the presence of a zinc counter or bar, where you can take a standing drink. The increase in the number of these wine-shops is becoming alarming; and although a drunken man is rarely seen in the streets of Paris, the hospital doctors will tell you that alcoholization threatens to become a very grave element in the depopulation of France."

Again, a writer in *Le Journal d'Agriculture Pratique* (one of the leading agricultural journals of France) who has been, in recent numbers, discoursing upon the social condition of the labouring classes in Normandy, draws an awful picture of swollen death-rates and crowded lunatic asylums, caused by over-indulgence in liquors of the cheap and nasty kind to which the natives are unhappily prone. So fearful an evil does the writer consider this to be, that he indulges in the most gloomy forecasts of the future, in which wasted lands and depopulated towns are prominent features. Such is the evidence of independent witnesses.

"With respect to the greater mortality amongst the poor than the rich, we have yet to learn," says the *Lancet*, "that the only hope of lessening the death-rate lies in diminishing the birth-rate. We have no *proof* as yet that the majority of the evils at present surrounding the poor are necessarily attendant upon poverty. We have yet to see a poor population living in dry, well-drained, well-ventilated houses, properly supplied with pure water and the means of disposal of refuse. And we have yet to become acquainted with a poor population spending their scant earnings entirely, or in a very large proportion, upon the necessities of life; for such is not the case when half the earnings of a family are thrown away to provide adulterated alcoholic drinks for one member of it. Until reforms such as these and others have been carried out, and the poor are able and willing to conform to known physiological laws, it is premature to speak of taking measures to lessen the birth-rate—a proposal, be it said, which makes the humiliating confession of man's defeat in the battle of life."

The following extract from the writings of Macaulay ought, I think, to reassure those who have begun to take a gloomy view of the future:—"When we compare our condition with that of our ancestors, we think it clear that the advantages arising from the progress of civilisation have far more than counter-balanced the disadvantages arising from the progress of population. While our numbers have increased tenfold, our wealth has increased one hundredfold. Though there are many more people to share the wealth now existing than there were in the sixteenth century, it seems certain that a greater share falls to almost every individual. If we were to prophesy that in the year 1930 a population of fifty millions, better fed, clad, and lodged than the English of our time, will cover these islands, that machines constructed on principles yet undiscovered will be in every house, that there will be no

highways but railroads, no travelling but by steam, that our debt, vast as it appears to us, will appear to our grandchildren a trifling circumstance which might easily be paid off in a year or two, many people would think us insane. If any person had told the Parliament which met in perplexity and terror after the crash in 1720, that in 1830 the wealth of England would compass all their wildest dreams, that the annual revenue would equal the principal of that debt which they considered an intolerable burden, that for one man of £10,000 then living there would be five men of £50,000, that London would be twice as large and twice as populous, and that, nevertheless, the rate of mortality would have diminished to one-half of what it then was, and the post-office would bring into the exchequer more than the excise and customs together had brought in under Charles II., that stage-coaches would run from London to York in twenty-four hours, that men would be in the habit of sailing without wind, and would be beginning to ride without horses, our ancestors would have given as much credit to the prediction as they gave to *Gulliver's Travels*."

"It cannot be actually proved," says a writer on the subject, "that those are in error who tell us that society has reached a turning point, that we have seen our best days; but so said all who came before us, and with just as much apparent reason. On what principle, I ask, is it, when we see nothing but improvement behind us, we are to expect nothing but deterioration before us?"

ARTICLE VII.—*A Case of Arrested Development of the Cerebellum and the Bones of the Skull in a Child.* By FRANCIS OGSTON, jun., M.D., Assistant-Professor of Medical Jurisprudence in the University of Aberdeen.

THE following case of defective development of brain and skull, which was met with in a child of sixteen months of age, seems worthy of record, as it is of interest to the physiologist and to the medical jurist—to the latter, since a child which would have been regarded as non-viable should have been reared, and should have survived its birth for so long a period of time.

In comparing the defects found in this case with Breschet's Table of Monstrosities, it might be classed as follows:—

Order I.—Agénèses.

Genus I.—Agénésies.

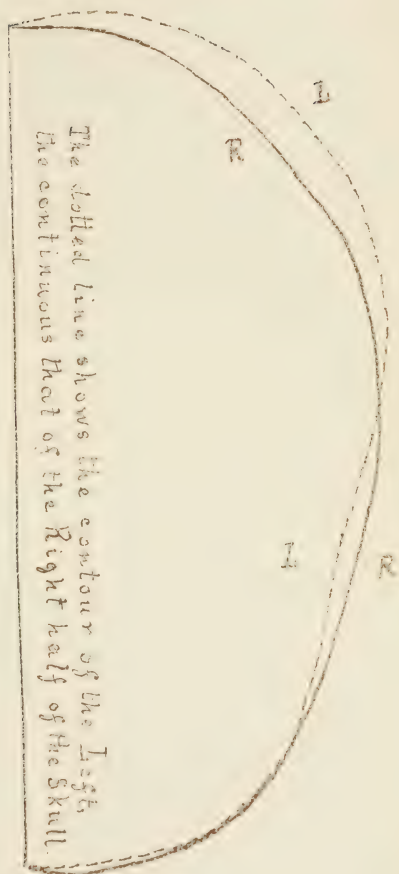
History.—Of the life history nothing could be learned further than that both father and mother, who were healthy, had been farm-servants, and that it was an only child. There was no family history of hereditary defect or syphilitic disease. The child had been born in the country, at some distance from a medical man,

and the doctor who attended the birth had never seen it afterwards, and could give no account of its early months. The mother stated that it had never been able to suck, had required constant care and attention, had never made any attempt to speak or walk, and could not even sit up on her knee without support; but that it moved its limbs equally well on both sides. The child had been found by its mother one morning dead in bed beside her; and at the request of the law authorities I was called on to make a post-mortem examination, and to report on the cause of its death, when the following appearances were noted:—

POST-MORTEM EXAMINATION.

External Appearances.—The body much emaciated, but not more so on one side than on the other; the extremities well formed; the chest symmetrical; the organs of generation well formed, and both testes in the scrotum. The length of the body $27\frac{1}{2}$ inches. The circumference of the head at the level of the supra-orbital ridges and the occipital protuberance, 17 inches. The right side of the head flatter than the left, especially at its posterior fourth (*vide* Plate I.). The left auricle normal in size and position; the right represented by a few scattered tubercles hardly raised above the level of the skin, arranged somewhat in the form of the auricle, the upper part being most distinct. On being cut into, these appeared to be composed of cartilage, and were intimately connected with the skin. There was no trace of the external meatus, nor were the rudiments of the pinna connected with the bones on which they lay by any ring of cartilage. The opening between the eyelids of the right side $\frac{2}{3}$ of an inch in length; the eyelids and lashes well formed, except for their size. The right eye totally wanting, the stump appearing to consist of mucous membrane, with no trace of pupil, etc. The left eye normal. The nose hooked like a parrot's beak, thickened at the junction of the cartilage and bones, its direction turned to the right, and the right aperture smaller than the left. The mouth well formed, but twisted to the right, so that its left angle fell on a line drawn from the root of the nose to the centre of the sternum. The lips well formed. The right cheek flatter, and the whole of the right side of the face very much smaller than the left. The measurement from the symphysis to the angle (or what appeared to be so) of the lower jaw on the right side, outside the cheek, $1\frac{1}{2}$ inch, on the left side $2\frac{1}{2}$ inches: from the root of the nose across the angles of the jaws to the third cervical vertebra, right side 6 inches, left side $6\frac{1}{2}$ inches. The fontanelles of the skull still unclosed. Very little hair on the head. The joints rigid. The lower part of the belly greenish. The front of the body generally pale, the back parts purplish. A round swelling, the size of a marble, an inch from the outer angle of the right orbit, on a level with it (sebaceous cyst).

Posterior



Anterior

Model

Plate II.



F.O. del

Defective development of the right
half of the lower jaw, in a child.

Life size

Internal Appearances.—On reflecting the scalp the fontanelles were found to be still unclosed, and the sutures of the skull were marked by lines of cartilage $\frac{1}{2}$ of an inch in breadth. The bones of the right side of the head appeared flatter than those of the left, especially at the right half of the occipital and the posterior part of the parietal bone at its inferior angle. On the right side, the temporal, pterygoids, and the masseter muscles seemed wanting; the muscles of the mouth and cheek otherwise appeared normal. The right zygomatic arch was very rudimentary, being represented merely by a short process of cartilage springing from the malar bone, and a similar one from the temporal bone. The hard and soft palate normally developed, the right side, however, and the right side of the upper jaw, being smaller than the left. The right half of the tongue about a third the size of the left, so that the tip was inclined to the right, and appeared to be formed of the left half of the organ. The lower jaw very much deformed on the right side (*vide* Plate II.), which ended in a rounded knob behind the second temporary molar tooth with a small projecting tubercle; no trace of the coronoid and condyloid process existing (see under). The right temporal bone was small, showing no trace of glenoid cavity, auditory meatus, or mastoid process. The cavity of the tympanum was also wanting, this part consisting of a transparent lamina of bone, bounded above by a narrow isthmus of bone. The semicircular canals seemed normally developed (see under). On the left side these bones were normal. The cerebral lobes normal, equal in size; but the right one appeared flatter posteriorly than the left. This on further examination was found to be caused by a defect in the cerebellum, the right posterior cerebral lobe falling lower down than the left. The ventricles of the brain and the ganglia at its base seemed normal. The optic nerve was normal on the left side, but the right was much smaller than usual. The olfactory nerves normal. The medulla oblongata and the pons varolii appeared normal, or nearly so. The right half of the cerebellum smaller than the left, and somewhat irregular in shape (see under, Plate III.) The substance of the brain contained considerably more blood than usual. The gullet and air-passages normal. The lungs contained a considerable amount of dark blood and white froth. A few minute spots of effused blood (Tardieu's spots) on the surfaces of the lungs and heart. The right cavities of the heart contained considerably more blood than the left cavities. The blood in both contained firm clots. The valves and walls of the heart healthy. The liver, spleen, and kidneys loaded with blood. The right lobe of the liver smaller than usual. From these appearances I gave it as my opinion that the child had died from suffocation (smothering), judging from the gorged state of the lungs, liver, spleen, and kidneys, from the punctiform ecchymoses (Tardieu's spots) on the lungs and heart, and from the amount of blood in the right cavities of the heart; but stated that the defects in its

cerebellum and jaw had rendered it so weakly that its life would be much more easily extinguished than that of a normally-formed child.

I append a more minute description of the defective structures in this case.

I. *The Central Parts of the Brain.*—Measurements of the cerebellum :—

Antero-posterior, .	Left, $2\frac{5}{8}$ inches.	Right, $2\frac{6}{8}$ inches.
Transverse, .	” $1\frac{3}{4}$ ”	” $1\frac{1}{4}$ ”
Vertical, .	” $1\frac{1}{2}$ ”	” $1\frac{1}{2}$ ”

The anterior part of the right lobe of the cerebellum seemed undeveloped (as is shown in Plate III.), the whole measuring about two-fifths the bulk of the left lobe, and being flattened to a considerable degree. The right side of the pons varolii seemed a little less than the left.

Nerves.—1. The olfactory nerves were normal. 2. The optic commissure seemed smaller on the right side, and the right optic nerve was much smaller than the left. 3. The motor oculi appeared to be absent on the right, normal on the left side. 4 and 5. The fourth and fifth nerves were normal. 6. The abducens was absent on the right, and small on the left side. 7. The facial and auditory nerves were very small on the right, normal on the left side. 8. The glossopharyngeal, pneumogastric, and spinal accessory nerves were absent on the right, normal on the left side. 9. The hypoglossal nerve was wanting on the right, normal on the left side.

II. *The Lower Jaw.*—The line of the symphysis menti ossified and vertical, internally marked by a distinct groove. Only the left genial tubercles well marked. Beneath the left incisor and canine teeth the margin of the jaw was curled outwards and upwards, producing a deep groove parallel to the margin. The mental foramen was deficient on the left side, extremely minute on the right (deformed) side, but transmitting a minute filament. The inferior dental foramen and nerve were normal, as were all the ridges and fossæ on the left side. On the right side of the jaw the teeth behind the lateral incisor were crowded together, the canine being pushed forward, and the two temporary molars being contained in a stumpy alveolar process, which ended posteriorly in a rounded spine or tubercle. There was no lower border on the side of the jaw, but merely alveolar process. None of these teeth had erupted. The two central incisors and the right lateral incisor were the only teeth seen above the gum. The left lateral and the canines were seen above the bones, but were not through the gum. The central incisors were decayed at their cutting edges. On the left side the first temporary molar was seen underneath the periosteum of the alveolar process, and an expansion of the bone showed

Plate III.



Defective Development of the Cerebellum
Life size.

the position of the second molar, while another expansion just beneath the anterior edge of the coronoid process seemed to indicate the position of the first permanent molar.

Measurements of the Lower Jaw.

Symphysis to canine angle—	Right, $\frac{1}{16}$ inch.	Left, $\frac{7}{16}$ inch.
Depth of jaw at first molar—	” $\frac{7}{16}$ ”	” $\frac{9}{16}$ ”
Thickness	” ” $\frac{6}{16}$ ”	” $\frac{6}{16}$ ”
Length of right side in a straight line from the lower edge of the symphysis to the tip of the tubercle,		$\frac{7}{8}$ ”
Length of the left side from symphysis to angle in a straight line,		$1\frac{1}{2}$ inches.
Symphysis to condyle in a straight line,		$2\frac{1}{4}$ ”
” anterior edge of coronoid,		$1\frac{5}{8}$ ”
Angle to tip of condyle,		$1\frac{3}{16}$ ”
” coronoid,		$1\frac{1}{8}$ ”
Alveolar process to tip of coronoid,		$\frac{1}{16}$ inch.
Length of the left condyle,		$\frac{9}{16}$ ”
Left canine angle,		50° .
Right ” ”		60° .
Right body rising at an angle of		20° .
Left ramus at angle of 40° to the lower margin of the body.		

III. *The Right Temporal Bone.*—*Externally*—The zygomatic process directed downwards, outwards, and forwards, cartilaginous and $\frac{1}{2}$ inch in length. Eminentia articularis absent, and no cartilage in the fossa where the glenoid cavity should have been. The mastoid process absent. A rounded bony eminence in the posterior temporal ridge. The condyloid process of the occipital bone $\frac{3}{8}$ inch from the zygomatic process. No auditory, styloid, or vaginal process. No stylo-mastoid foramen. The squamous portion about the size of a shilling.

Internally—The eminence for the superior semicircular canals well-marked. A deep hollow over the tegmen tympani. The cassarian depression deeply marked. The groove for the lateral sinus deeply marked, and ending above in a very deep hollow, capable of holding the tip of the forefinger, the bottom of which was so near the depression over the tympanum that the bone between them was diaphanous. The hiatus fallopii present. The groove for the superior petrosal sinus absent. The carotid canal normal, containing the carotid artery of normal size. The internal auditory meatus normal, and containing an apparently normal nerve. The aqueduct of the vestibule normal. No Eustachian tube nor canal. Jugular foramen and foramen lacerum posterius present.

ARTICLE VIII.—*On the Riviera, Madeira, the Canary Islands, and Davos, with reference to their Climate for Consumptive Invalids.*
By WILLIAM MARCET, M.D., F.R.S.

(Continued from page 27.)

Davos.—Davos (5105 feet) now claims our attention. We have here to deal with a totally different set of conditions. The climate is in many respects the opposite of that with which we have just been engaged, and yet Davos has a right to be considered as a very important sanitary station for consumptive invalids. The excellent paper of Dr Hermann Weber (*Medico-Chirurgical Transactions*, 1869) on that winter station has much helped to bring it into repute for English patients; Dr C. T. Williams has published in the *Lancet* (Aug. 9th and 18th, 1879) important communications on that same subject, and read quite lately a valuable paper on the climate of Davos to the Meteorological Society. A low temperature of the air, a state of comparative atmospheric dryness, a low atmospheric pressure, and bright sunny weather, together with a comparative absence of wind,—such are the leading meteorological characters of that place in winter. It is not my intention to enter into a report of the readings for temperature and moisture at Davos, but I merely propose to give the reader an idea of the highest degree of cold experienced there in winter by quoting the minima observations made this last month of December at that station at the Hotel Belvedere, with instruments verified at the Kew Observatory, and placed according to the regulations of the English Meterological Society.

Daily Lowest Temperature at Davos in December 1879.

Dates.	° Fahr.	Dates.	° Fahr.
1	1·5	17	3·0
2	3·0	18	8·7
3	— 9·5	19	9·0
4	13·0	20	14·0
5	25·5	21	14·3
6	3·75	22	13·85
7	1·50	23	12·25
8	—14·0	24	14·0
9	—16·7	25	12·0
10	—14·7	26	11·33
11	— 8·0	27	12·0
12	— 6·1	28	10·5
13	10·25	29	13·25
14	9·75	30	23·5
15	— 7·0	31	12·0
16	3·0		

It must be recollected that December 1879 was particularly cold in Switzerland as well as in England, so that these figures, especially those for the first half of the month, are not unlikely to be below the average; still they show that the winter temperature may fall low indeed at Davos. The heat of the sun, however, in such dry air and at that altitude, together with the increased phenomena of oxidation carried on in the body, allow patients to take exercise in the open air and benefit by it. It is known, from inquiry made by Dr Lombard¹ of Geneva and other careful observers, that beyond a certain altitude, say about five or six thousand feet, and under a low temperature, cases of consumption among the inhabitants of those districts are extremely rare, showing that there is an influence at such altitudes and under a low temperature towards checking the development of that disease. This remarkable circumstance, and the influence of altitude on consumptive patients, as exemplified at Davos, might be considered as apparently owing to the same cause, although it would be unphilosophical to consider *a priori* that because consumption is unknown amongst the inhabitants of certain high regions, therefore those who live nearer to the sea level, and who suffer from consumption, will necessarily cure or improve in such places. An argument of that kind, if correct, would apply equally to other diseases, and it might be said that because scurvy is unknown among the Esquimaux, which I believe to be the case, therefore scurvy will be cured by living in high latitudes, and that is certainly not in accordance with experience.

The beneficial influence with reference to phthisis often met with unquestionably in places situated at certain altitudes must be accounted for especially by a consideration of the state of the respiratory functions at stations raised by from four to six thousand feet above the sea. I have given this subject much attention for some years, and carried on the inquiry at various altitudes and under different latitudes. The results of these experiments² throw much light on the subject under our present consideration. Two persons subjected themselves to this inquiry, myself and a Chamonix guide. The work was undertaken partly on the mountains in Switzerland and partly on the island and Peak of Teneriffe, in the summer of 1878. So far, the experiments made on the guide apply only to Teneriffe, and in the present communication I shall refer exclusively to the inquiry with which I was alone concerned. At all events, it would not have done to compare the respiratory function of a man whose home is in the mountains, and who makes mountaineering a business, with that of people who reside away from the influence of mountain air, and whose mode of living is entirely different.

In these experiments the air was expired into an indiarubber

¹ *De l'immunité Phthisique*, par le Docteur H. C. Lombard, 1871.

² *Proceedings Roy. Soc.*, No. 187, 1878, and No. 195, 1879.

bag of a known capacity, an ori-nasal face-piece being used, so constructed with valves as to allow of fresh air to be taken in at each inspiration. The time, together with the number of expirations required for filling the bag under a pressure of an inch of water was carefully observed, and the air collected in the bag was afterwards subjected to analysis for the determination of the carbonic acid it contained. The frequency of the respirations from a mean of thirty-three experiments at the lower, and six at the higher station, in the sitting posture, while breathing into the bag, showed no increase between the altitudes of 1230 feet (Lake of Geneva) and 8115 feet (St Bernard), but between 8115 feet and 13,685 feet (summit of Breithorn) it increased in the following ratio:—

From 8115	to	8428	feet,	20·4 per cent.
(Riffel.)	(St Theodule.)			
„ 8428	to	10,899	„	} 12·7 per cent. beyond the latter.
„ 10,899	„	13,685	„	
				6·3 per cent. beyond the latter.

Other experiments I made last year at Chamounix (3445 feet) and on the summit of the Brevent (8284 feet) yielded a mean of the same number of expirations per minute at both stations; and, moreover, the actual figures for the mean frequency of respiration near the Lake of Geneva, at the St Bernard, at Chamounix, and on the Brevent turned out the same, so that there can be very little doubt of the correctness of the result, that between 1230 feet and, say, 8000 feet in the Alps there is no appreciable increase in the rate of respiration while in the sitting posture. M. Mermod,¹ after a careful series of observations made on himself, concludes that a change of residence from altitudes of 466 feet to 3609 feet above the sea is unaccompanied by any increase of the respiratory movement, which is quite in accordance with my observations. It appears, however, that when approximating an altitude of 8500 feet the respiration, while the body is in the sitting posture, becomes suddenly quickened; at all events, such was the case with me in the Alps. This rate of my breathing continued increasing from 8428 feet to 10,899 feet, although proportionally in a lesser ratio, and a still further increased frequency of the respiration occurred between 10,899 and 13,685 feet, but again in a proportionally smaller ratio than in the case immediately preceding.

My experiments at different altitudes on the Peak of Teneriffe gave, as to the rate of breathing, results somewhat different from those obtained on the Alps. The increase in the frequency of the respiration (the experiments beginning at the seaside) commenced at a lower altitude than in the Alps, or below 7090 feet, while the rate of breathing between 7090 feet and 11,745 feet was found nearly the same, with a slight falling off at the higher station. The difference occurring in these results must be due to circum-

¹ *Bull. de la Soc. Vaudoise des Sciences Nat.*, 1877.

stances connected with the difference of latitude, and especially of temperature; but it is not my object to enter into that subject at present. The observations as to the rate of breathing in the Alps do not appear to show that most people wintering at Davos should be liable to a marked increase of frequency of their respiration. These experiments, however, were only undertaken on myself, and I may be considered as more accustomed to the influence of light mountain air than most of the patients removing from near the sea level to the Davos station. It is, however, mainly from a greater expansion of the chest, and not from an increased frequency of respiration, that the increased volume of air required for respiratory purposes, due to the low barometrical pressure, is inhaled.

The volume of air breathed per minute, reduced to 32" and seaside pressure, was found to be approximately *the same*, though *not quite so*, at altitudes varying from 1230 feet to 13,685 feet in the Alps. There was a decided tendency to the respiration of a smaller weight of air (or smaller bulk reduced) in the higher than in the lower altitudes. At Teneriffe a pretty regular falling off was observed at altitudes varying from the seaside to 11,745 feet, the proportions being—

Seaside,	.	.	5.84 litres expired per minute.
At 7,090 feet,	.	5.47	" " "
At 10,700 "	.	5.14	" " "
At 11,745 "	.	4.99	" " "

—these figures giving the reduced volume of air expired; the real volumes were therefore not quite inversely proportional to the atmospheric pressures.

In the Alps the reduced volume of air expired per minute fell from 5.14 litres at 1230 feet to 4.42 litres at 8115 feet, but at greater altitudes it fluctuated irregularly between 4.42 and 4.86. From these results we may conclude that at Davos the amount of air breathed would be rather less than inversely proportional to the height of the barometer. With a barometer at 760 mm. at the seaside a volume of air of 6 litres expired per minute at the seaside, say at 60° Fahr., would become increased to *nearly* 7.2 litres at Davos under an atmospheric pressure of 630 mm., which would be inhaled quite unconsciously. I say *nearly*, because the actual volume would be a trifle less on account of the tendency to breathe a smaller weight of air in a given time as altitudes increase above the sea. If, therefore, there be little or no increased rate of respiration at Davos, and if nearly 7.2 litres of air are breathed at that place per minute instead of 6 litres at the seaside, the expansion of the lungs must be greater by about 17 per cent., or a trifle less than one-sixth. This accounts perfectly for Dr C. T. Williams's observation that the capacity of the chest is increased after wintering at Davos.

Let us now consider the amount of carbonic acid expired at various altitudes. It will be found that, as a rule, in the sitting

posture, in cold latitudes such as the Alps, more carbonic acid is formed and exhaled high up above the sea than at lower altitudes, although the excess cannot be said to increase proportionally with the altitude. Thus the mean weight of carbonic acid I expired while sitting quiet at the summit of the Breithorn (13,685 feet) and the St Theodule Pass (10,899 feet) was, taken collectively from nineteen experiments, 0.419 milligrammes; at the Riffel hotel (8428 feet) and St Bernard (8115 feet), also taken collectively, the mean of twenty-seven experiments yielded 0.414 milligrammes carbonic acid,¹ while near the Lake of Geneva the mean of thirty-three experiments fell to 0.383 milligrammes—these inquiries being made, as a rule, during the month of August. Monsieur Mermod, whose experiments have already been referred to, arrived at a similar conclusion. He states, as one of his results, that “the absolute and relative amount of carbonic acid exhaled by the lungs increases by a change of residence to a higher place, and that this occurs without any alteration of the respiratory frequency, and with a falling off of the weight of air breathed.” This gentleman, however, experimented on differences of altitude much smaller than in my case, his highest station being at 3609 feet, and his lowest 466 feet above the sea.

At Teneriffe, where the heat in summer is very great at every altitude up to the summit of the Peak, I failed to ascertain that any positive increase of carbonic acid was emitted, over the amount expired on that island at the seaside, even at the height of 11,745 feet—the foot of the terminal cone. The increased carbonic acid expired in the Alps, therefore, clearly depends upon the action of cold on the body; and this is due to the low temperature of the atmosphere, united to the loss of heat from increased cutaneous and pulmonary evaporation produced by the dryness of the air at such altitudes.

Applying these results to Davos, we must conclude that invalids wintering at that station expire a greater amount of carbonic acid than they would have done in the plains; and I would be inclined to believe that this excess is much greater than might be thought at first sight, on account of the intensity of the cold.

No doubt the hotels are carefully heated, and patients do not go out, as a rule, unless a bright sun is shining; but it is impossible to check entirely the influence of the external cold, and the lightness and dryness of the air by increasing both cutaneous and pulmonary perspiration, must add to the cooling influence which requires an increased combustion in the body to maintain its normal temperature.

I have therefore observed in the Alps two physiological phenomena connected with respiration—first of all, a slight but positive

¹ Had I proposed to go into details, I could have shown that the amount of carbonic acid expired often fell as the temperature of the air increased, and *vice versa*, irrespectively of altitude.

decrease in the *weight* of air breathed at high altitudes, and next an increased expiration of carbonic acid. This is clearly shown in the following table, giving for various altitudes the volume of air expired, reduced to the freezing point and seaside pressure, corresponding with the expiration of one gramme of carbonic acid. The table includes the results obtained in the Alps and on the Island of Teneriffe.

The Alps.

Station.	Altitude.	Mean temperature of the air during the experiment.	CO ₂ Expired.	Litres of Air expired, reduced.
			Grammes.	
Yvoire, near } Geneva . . . }	1,230	57°·8 F.	1	1·36.
St Bernard . .	8,115	43°·7	1	1·04
Riffel	8,428	52°·4	1	1·14
St Theodule . .	10,899	39°·2	1	1·16
Summit of } Breithorn }	13,685	34°·9	1	1·08
				Mean at and above 8115 feet, 1·105.

Teneriffe.

Seaside . . .	...	...	1	1·24.
Guajara . . .	7,090	69°·6 F.	1	1·19
Alta Vista . .	10,700	64°·2	1	1·18
Foot of terminal cone }	11,745	64°·0	1	1·06
				Mean at and above 7090 feet, 1·143.

A similar calculation made with M. Mermod's results would give proportions of 1 gramme CO₂ to 1·461 litre air expired for his lowest station, and 1 to 1·311 for the highest.

Therefore, in the Alps at 1230 feet, my lowest station, one gramme of carbonic acid exhaled corresponded to 1·36 litres of air expired, and at and above 8115 feet—say 8000—one gramme of carbonic acid corresponded only to 1·105 litres of air expired, amounting to 18·7 per cent. less air for the same weight of carbonic acid; therefore about one-fifth more air passed through the lungs into the blood in a given time than at 1230 feet. At Teneriffe, at the seaside, for one gramme carbonic acid 1·24 litres of air were expired, and above 7098 feet only 1·143 litres of air, making a reduction of 7·8 per cent. The decrease is, therefore, greater in the mountains of the northern latitude than in those which are nearly tropical.

From these results it must be concluded that one gramme of carbonic acid expired in the sitting posture at Davos, or at any station under similar conditions, will require the inhalation of less air than

one gramme of carbonic acid would require in London, for example ; or, in other words, that the air breathed at Davos and allied stations will pass more readily or more rapidly into the blood through the lung tissue than it will in London or near the sea level.

This is a result which appears to me to go far towards solving the question—Why does an immunity against phthisis exist at certain altitudes, and why can Davos and other high stations prove beneficial in cases of consumption ? The answer is, because the air passes with greater facility, or more rapidly, through the substance of the pulmonary tissue (even when thickened by disease) into the blood, while the carbonic acid finds its way more readily through this same tissue from the blood into the external air. Thus the phenomena of oxidation are carried on in the body more rapidly and more completely at certain altitudes than nearer to the seaside, although I am not in a position to state whether this would continue during a prolonged sojourn on a high mountain. My inquiries show, moreover, that the present influence of altitude upon respiration is more distinctly marked in northern than in southern latitudes for equal altitudes.

On referring to Dr H. Weber's paper, quoted above, I find the following passage (p. 226):—"The elevation necessary for producing a certain degree of immunity from phthisis varies considerably in different latitudes, and seems to become lower in proportion as we proceed from the equator towards the poles. Thus, in the tropical zone it may be regarded as above 8500 or 9500 feet, while in the temperate zone it is considerably lower." The fact so distinctly shown from my investigation, and which I consider to account in a great measure for the influence of elevation on phthisis, is perfectly in keeping with this statement, and acquires thereby an additional degree of importance.

An excess of ozone has been proposed as the cause of the present influence of altitude ; but so little is known of this substance in a physiological point of view, that I should consider it very uncertain how far it contributes towards an increased combustion in the body.

ARTICLE IX. — *Comparison between the Scoliotic and Obliquely Contracted (Naegele) Pelvis.* By FRANCIS HENRY CHAMPNEYS, M.A., M.B. (Oxon.), Medical Registrar to St Bartholomew's Hospital, Physician to the Out-Patients at Queen Charlotte's and the Samaritan Hospitals.

It is impossible to compare a scoliotic pelvis with a pelvis of Naegele without seeing many points of resemblance which are the more instructive from the difference of the original conditions of distortion. This will be seen most easily from the following table:—

SCOLIOTIC.	NÆGELE.
<i>Cause</i> .—Scoliosis of lumbar vertebræ.	<i>Cause</i> . — Ankylosis of sacro-iliac joint.
<i>Effects</i> .—(1) Increase of pressure on the sacro-iliac joint of the overweighted (same) side.	<i>Effects</i> .—(1) Do.
(2) Dwarfing of os innominatum of same side.	(2) Do.
(3) Dwarfing of sacral ala of same side.	(3) Do.
(4) Traction at post. sup. spine of opposite side.	(4) Do.
(5) Expansion of opposite side.	(5) Do.
(6) Horizontal rotation of sacrum at sacro-iliac joint towards affected side.	(6) Do.
(7) Approximation of sacrum of same side to acetabulum (narrowing of sacro-cotyloid diameter).	(7) Do.
(8) Increasing weight thrown on affected side of pelvis.	(8) Do.
(9) Rotation of ilium of affected side round acetabular axis.	(9) Do.
(10) Rotation round antero-posterior axis; eversion of tuber ischii; enlargement of transverse diameter of outlet.	(10) Inversion of tuber ischii, contraction of trans. diameter of outlet.
(11) Increase of curve of posterior part of linea innominata, diminution of curve in anterior part on affected side.	(11) Linea innominata almost straight.
(12) Symphysis driven to opposite side.	(12) Do.
(13) Narrowing of conjugate (sometimes).	(13) No contraction of conjugate, sometimes enlargement.
(14) Expansion of antero-posterior diameter of outlet.	(14) None.
(z) Ankylosis of sacro-iliac joint from pressure (Leopold.)	(x) Lumbar scoliosis.

No better instance of the method of agreement and the method of difference could be found. The agreements need not be further insisted on. The difference No. 11 is easily traceable to the presence or absence of ankylosis; No. 13 to the presence or absence of lordosis.

It is easy to see that where the fulcrum of a lever is not a hinge, the conditions are at once changed (Matthews Duncan's *Researches in Obstetrics*, p. 81). It is also easy to see that such ankylosis abolishes rotation round the fulcrum.

The difference No. 13 is not due to the presence or absence of scoliosis (as may be seen from purely scoliotic, not ricketty pelves), but to the degree of forward inclination of the body weight, of which lumbar lordosis is usually a sign. The consequent lumbar scoliosis in Nægele's pelvis, and the consequent ankylosis from pressure in the scoliotic pelvis, are extremely interesting, cause and effect changing places in these two pelves.

The whole study adds confirmation, if that is needed, to the "beam" and lever, as opposed to the "wedge" theory of the sacrum.

A few words are required to explain the inversion of the tuber ischii of the affected (same) side in the pelvis of Naegele, and its eversion in the scoliotic pelvis (No. 10). This eversion in the scoliotic pelvis is referred by Leopold to the action of the rotator muscles of the thigh, which pass from the tuber ischii to the great trochanter, and which act with greater force on the affected side from the fact of the weight falling on that leg, and the consequent higher position of the acetabulum. This explanation is ingenious, but has always seemed to me inadequate; and the comparison of these two pelvis throws considerable doubt on it. Moreover, it could at most produce eversion of the tuber ischii, but could never produce rotation of the whole innominate bone. Again, if the weight falls on the affected side in one pelvis, so does it in the other, and the result should be the same. It is, however, precisely the reverse. We must seek, then, for another explanation. It seems to me that the explanation is to be found by contemplating the pelvis not only during walking, but also during sitting.

In the scoliotic pelvis, which is usually (it must be remembered) also a flat pelvis, the action of the posterior ilio-lumbar and ilio-sacral ligaments has been in marked operation on the iliac beam, which has acquired unusual flexion at the point of least resistance, and the pelvis has become laterally expanded. This flexion can be well perceived by marking the angle (seen from below) formed by the iliac and ischio-pubic portions of the os innominatum. The tuber ischii is thus carried somewhat outward, and the acetabulum and tuber ischii, instead of being practically in a straight line with the sacro-iliac joint (from which the weight is transmitted), lie outside. The portion of bone intervening between the resistance below (tuber ischii or acetabulum) and the weight above (extremity of sacral ala and posterior superior spine) may be regarded as a rod of a length determined by the distance between two lines (one drawn in the direction of the action of the weight, and the other in that of the resistance), opposite the sacro-iliac joint. The result will be the production of that which is technically known as "a couple of forces," the action of which is to produce rotation. The os innominatum is thus rotated round an antero-posterior axis through the sacro-iliac joint; the tuber ischii is everted.

It is evident that the more nearly the lines of pressure and weight coincide, the shorter is the rod, the less the rotation. In other words, the less the transverse pelvic diameter at the tubera ischii and acetabula, the less the subsequent rotation of the os innominatum. The eversion is produced on one side only, because the weight falls on that side; the other tuber ischii, on the contrary, is inverted from the traction of the great sacro-sciatic ligament, the tension of which is increased by the deviation of the sacrum to the opposite side, while the same ligament on

the affected side is relaxed. The eversion of the tubera ischii, whether on one side or both, depends not on scoliosis primarily, but on flattening of the pelvis, and this on forward inclination of the body weight, usually marked by lumbar lordosis.

In the pelvis of Naegele, ankylosis has prevented the operation of the iliac beam; the lateral expansion of the pelvis does not take place; the tuber ischii falls *within* the perpendicular of the weight of the body; the arm of the lever points *inwards*; rotation of the os innominatum and tuber ischii occurs *inwards*; the pelvic outlet of the same side is narrowed; but the sacro-iliac joint being destroyed, the inversion affects the tuber ischii only, rotation being impossible. In the ordinary rickety flat "Sitz-becken" both tubera ischii are everted. This view gains support by the contemplation of a child's pelvis, in which lateral expansion of the pelvis as a whole, and of the tubera ischii in particular, has not yet taken place. The usual dwarfing of the os innominatum of the affected side in the sciotic pelvis would seem to show that the same dwarfing in the pelvis of Naegele is largely due to growth under abnormal pressure rather than to arrest of development as ordinarily understood.

Sciotic pelves occur in which the weight seems to have fallen first on one side and then on the other, the tuber ischii of the eventually overweighted side being inverted instead of everted. With regard to these it need only now be remarked that inversion of a certain degree will prevent the possibility of subsequent eversion even under reversed conditions, the lever having once pointed inwards. To procure eversion, the lever must first be made to point outwards; the weight of the body will subsequently increase its length. That sitting has a considerable effect appears from the frequent dwarfing of the whole affected os innominatum, even below the acetabulum. This it would seem must be produced by pressure at the tuber ischii.



ARTICLE X.—*On Axis-Traction Forceps.* By ALEXANDER RUSSELL SIMPSON, M.D., F.R.S.E., Professor of Medicine and Midwifery and the Diseases of Women and Children in the University of Edinburgh.

(Communicated to the Obstetrical Society of Edinburgh, 21st July 1880.)

I HAVE entitled this communication "On Axis-Traction Forceps;" but, with the indulgence of the Society, I shall—I. Formulate the Indications for the Use of Forceps generally; II. Note the different Modes of Action of Forceps; III. Discuss some points in their Construction, and especially the meaning and value of arrangements for Axis-Traction; IV. Formulate the Rules that should guide us in their Employment, Application, and Working.

I. INDICATIONS FOR USE.

Indications for the use of the forceps arise either in Delayed Labours or in Labours immediately Dangerous.

A. DELAYED LABOURS.—There is a fault in one or more of the factors of labour; and when two or even all the three factors are found to be faulty, it is always well to seek to determine in which of them the fault originated and is most pronounced—whether 1, in the Powers; 2, in the Passages; or 3, in the Passenger.

1. Fault in the parturient *Powers*, primary or secondary, or both.

1st, *In the Uterine Power*.—The primary or essential power of parturition, which is found in the great muscular system of the uterine walls, may be at fault from (1st) *Atony* or *Inertia*. In this case the labour becomes protracted or altogether arrested, and the condition is evidenced by the shortening of the pains, while the intervals become more and more prolonged. This may take place in rare cases already in the first stage. If in such a condition the membranes are still unbroken, it is best, in a primiparous patient, to get the labour suspended for a time by means of sedatives, in the expectation that after the uterus and the general system have been rested and restored, the parturient power will return with increased vigour. In multiparæ it is sometimes better to rupture the membranes so as, by escape of some of the liquor amnii, to develop uterine action. Rarely in such conditions does it become advisable to apply the forceps. Far more frequently the delay from inertia occurs in the second stage; and whether this set in in the case of a uterus that has acted imperfectly from the first, because of weakness resulting from frequent and rapidly succeeding pregnancies, or disease in the walls, or in the case of a uterus that has got worn out during an ill-managed first stage, the forceps always offers the best means of terminating the labour. I am unhesitatingly on the side of those who in all such cases reject out and out the treacherous help that seems to be offered in the oxytocic power of ergot.

(2dly) *Irregular Action of the Uterus*.—The uterus, in certain cases instead of, as it were, sulking and ceasing its work, gets irritable, and is thrown into a series of irregular contractions. In this case pains are present, perhaps constant; but the contractions in the uterine walls are spasmodic and partial, and quite inoperative for the advance of the head. When the practitioner is sure that the bowels and bladder are clear, and the membranes still unbroken, the unmistakable indication is to bring uterine action to a standstill by large doses of opium, chloral, chloroform or nitrite of amyl; and only where the membranes have been long broken and the waters much drained is there a call for immediate recourse to delivery with the forceps.

(3dly) There is a group of cases where contractions of the uterus,

perhaps vigorous and regular enough, are yet not producing their due effect in consequence of their *Mis-direction*. It is usually an anterior deviation of the fundus that exists in consequence of relaxation of the abdominal walls; and probably proper posturing of the patient, or application of a bandage, will render the uterine effort efficacious. If not, some practitioners will apply the forceps, whilst others elect turning.

2d, In the *Abdominal Power*.—The secondary or accessory force supplied by the action of the abdominal and respiratory muscles fails in cases of exhaustion, of general debility, of paralysis, or in diseased conditions of some of the abdominal and thoracic viscera. In many of our patients we happily find a compensatory relaxation of the soft passages, which offers such slight resistance to the progress of the passenger that the uterus is equal to the occasion, and expels its contents without the usual aid of the accessory power. Sometimes the accoucheur can supplement the uterine effort by pressure with his hands or a bandage. But often he gives most effective aid by application of the forceps.

2. The fault is in the parturient *Passages*, soft or hard.

1st, In the *Soft Canals*.—With regard, *first* of all, to the *Cervix*, I have to remark, that after all that has been said and written on the subject, I believe that the application of the forceps within the partially dilated os uteri is very seldom called for in practice. To my mind some other element of delay or danger must be present to warrant the extraction of the head with the forceps through an imperfectly expanded cervix; and in such conditions the extraction should be conducted cautiously, and with the clear conviction that undue rapidity of action is liable to cause laceration of the cervical tissues. The *Vaginal walls*, in the *second* place, may offer obstruction to the normal progress of the head either from original or acquired narrowness which existed before labour, or, more frequently, from their having become swollen and dry during a too protracted labour. In either case, when the natural efforts are bringing the patient only into danger, the use of the forceps will rescue her. In many primiparae, *thirdly*, the plane in the soft canals at which the chief difficulty is encountered is in the *Perineum*; and whilst in some instances the head can be shelled out by pressure exerted on the forehead through the rectum, or from the cutaneous surface at the sides or tip of the coccyx, in others the difficulty is most easily overcome by the use of the forceps.

2d, *Hard Canals*.—The degree of pelvic contraction that requires and permits the application of the forceps ranges from a line less than 4" to 3½" in the conjugate diameter of the brim. Their employment may sometimes be successfully had recourse to in a pelvis that is even reduced to 3" in this diameter; in such a case the head must be small, and unless it be a flattened pelvis with transverse elongation, which would admit of successful turning, it is

safer for the mother to have recourse to early perforation of the full-sized foetal head.

The operation with which forceps application, however, comes most frequently into competition in a pelvis, say of $3\frac{1}{4}$ " or $3\frac{1}{2}$ " in the conjugate of the brim, is, as I have hinted, the operation of turning. In making our choice between turning and forceps, the most important guide to a satisfactory decision is found in a study of the *form of the pelvis*.

The *form* of pelvic contraction most favourable for forceps application is the uniformly or universally contracted pelvis—*pelvis equabiliter justo minor*; and the index is to be found, as I have pointed out elsewhere,¹ in the very pronounced flexion of the foetal head, which takes place high up in such a pelvis, rendering the anterior fontanelle quite inaccessible, whilst the posterior fontanelle comes low and lies near the line of the pelvic axis. Where, on the other hand, we find the anterior fontanelle on the same level with the posterior or depressed below it, while the sagittal suture is lying in the line of the transverse diameter of the brim, we are safe to conclude that we have to do with a flattened pelvis, in which we give mother and child the best chance of a safe delivery by having recourse to early version.² Other varieties of pelvic deformity—as the funnel-shaped pelvis, coccygeal ankylosis, small tumours, etc., may call at times for the use of the forceps. In all of them the dipping of the hindhead—the depression of the triangular fontanelle—makes us hopeful of securing a satisfactory grasp and a safe extraction.

3. Fault in the *Passenger*.

1st, Large Size of Head.—We often enough see a woman who has had a difficult first labour, which may even have demanded the forceps for its completion, give birth to her subsequent children without a repetition of operative interference. The relaxed dilated condition of the canal which remained after the passage of the first child allowed of the birth of the others by the natural powers of parturition. But occasionally the converse takes place. A patient has had one or two labours that were strictly natural, but a subsequent child requires to be extracted with the forceps. The cause of the difficulty lies in the greater bulk of the body passing, and notably in the increased size of the foetal head. The increase in bulk may be simply the larger size of the male over the female head, or of an unusually large child of either sex, as is seen in some cases of protracted gestation. Or the head may present such a degree of ossification of the bones as to interfere with the moulding, which allows of the expulsion even of a tight-fitting head under the natural efforts. In such cases the head comes down with the occiput and triangular fontanelle markedly depressed—the large head finding its way through the normal pelvis, as the

¹ See my *Contributions to Obstetrics and Gynecology*, p. 167.

² *Ibid*, p. 171.

normal head makes its way through the undersized pelvis, with an exaggerated degree of flexion. Such enlargements of the head form a very fair group of cases for extraction with the forceps; but the instrument becomes dangerous in its application to cases of morbid enlargement, as for hydrocephalus. It is not easy to define the degree of enlargement at which danger begins; but in any case where the practitioner finds that much force is required to approximate the forceps handles, and he has satisfied himself that he has not an antero-posterior grasp of the head, he may be sure that to persevere with their use will entail great dangers. There is to the mother the risk that the bulky mass that is dragged into the pelvis will contuse and tear the soft parts, whilst for the child the instrument will have much the same effect as an ill-constructed cephalotribe.

2d, Malposition of the Head.—An ill-placed head may require extraction with the forceps, when it is getting delayed in the cavity with the occiput persistently posterior. In such a case some failure of parturient power has often set in before the application of the forceps is indicated. Whether or not the labour is like to come to a stand-still, and it only progresses when traction, perhaps combined with a rectifying movement, is effected with the forceps, in such a case it is always important to seek to promote the flexion of the head before impressing on it a rotation movement. And this leads to the remark that a last indication on the part of the passenger is found in

3d, Malpresentation of the Head.—In cases where we find a head presenting badly at the commencement of labour, fitting itself to the pelvic brim, with the anterior lower than the posterior fontanelle, and constituting a brow or face presentation, we will often give mother and child the best chance by turning as soon as possible after the waters have escaped and the cervical canal is dilated. But where the head so presenting has come through the brim and is delayed in the pelvis, we must deliver with forceps; and even when such a presentation exists above the brim, and long escape of the waters now makes turning dangerous or impossible, we must, before thinking of diminishing the size of the fetal head, apply and attempt extraction with the forceps. These face cases more particularly do not constitute a very happy group for forceps application or extraction, but sometimes a child so presenting has been extracted alive without damage to the mother, when the only other alternative lay in some craniotomy procedure.

B. DANGEROUS LABOURS.—In labours that present features of special danger from Complications on the part of the Mother or the Child, the forceps may be required to save the lives of one or other, or both of them.

1. Maternal Complications.—In many cases of labour complicated with utero-placental hæmorrhage, with rupture of uterus,

with convulsions, syncope, etc., the artificial delivery that is urgently indicated can be most safely effected, both for mother and child, with the forceps. In cases of this kind the operator has frequently enough no choice. He may find himself called on to deliver a patient in immediate danger, and having only his hands at command, he must have recourse to turning. Even where he has a choice, the labour may still be in such an early stage that he prefers version. But the power we have of promoting the dilatation of the parturient canals by the hydrostatic bags tends to increase the proportion of cases in which we may eventually apply the forceps, and so give the child, and perhaps also the mother, a better chance of safe delivery.

2. *Fatal Complications.*—Under this heading we have merely to note cases of irreducible prolapsus funis, where rapid extraction with forceps will be effected in preference to other modes of delivery, when the waters have some time escaped and the head is entering the pelvis.

II. MODE OF ACTION OF FORCEPS.

1. *Traction.*—The great and primary use of the forceps is as a tractor, and, in the ordinary run of cases, it effects the delivery solely by the power it enables the operator to employ of making simple traction. It has, however, other modes of action, which must not be left out of sight, and which may sometimes be utilized.

2. *Compression.*—The compression influence of the forceps is one that, in most cases, we would willingly dispense with, seeing that diminution in one direction is usually compensated by increase in another. With the ordinary forceps no traction can be effected without some degree of compression. According to Delore,¹ the pressure on the head is about equal to half the amount of force exerted in traction.

3. *Rotation.*—During the progress of the head effected under the simple traction, the head tends to undergo the usual movement of rotation if the operator is simply careful not to hinder it. Cases may arise where the rotation may be promoted by a judicious movement with the forceps.

4. *Leverage.*—In common with many other practitioners in employing the ordinary forceps, I have found it handier, when the head was not descending under straight forward traction, to secure its advance by an alternate lateral lever movement. A forceps that will give us the power of perfect traction renders less necessary such pendulum action.

5. *Dynamic Action.*—It has often enough been observed in lingering cases, where the parturient powers had become almost

¹ *Gazette hebdomadaire de médecine et de chirurgie*, 1865, quoted in *Dict. Encyclop. des Sciences Médicales*, article "Forceps," p. 574. Paris, 1879.

inert, that after the head began to be dislodged in the grasp of the forceps the parturient energy revived. This has led some to attribute to the forceps what they have called a dynamic action, which Kilian at one time fancied might be increased by having the blades made of different metals, so as to add a galvanic to the supposed dynamic action.

(To be continued.)

Part Second.

REVIEWS.

The Alienist and Neurologist: a Quarterly Journal of Scientific, Clinical and Forensic Psychiatry and Neurology. Edited by C. H. HUGHES, M.D. Numbers for January and April. St Louis, 1880.

WE are sorry that we have taken so long to acknowledge the appearance of a new journal devoted to nervous and mental diseases. If the succeeding numbers keep up to the first two, it deserves to have a wide circulation.

The first article is on the "Propositions of the Association of the Superintendents of American Asylums for the Insane," by Dr John Curwen, which is continued in the April number. The author defends by strong arguments the proposition that the superintendent of an asylum "should have the entire control of the medical, moral, and dietetic treatment of the patients; the unreserved power of appointment and discharge of all persons engaged in their care; and should exercise a general supervision and direction of every department of the institution.

"No institution can be successfully managed by two persons. There must be one authority to which all others must be obedient, so that all parts shall work in harmony and aim steadily and unvaryingly at the production of the best results.

"This practice of divided authority was tried in the early history of the country, when the management of the institutions was patterned after the English hospitals; but it has been gradually abandoned, and even in Great Britain it has been steadily changing year by year, so as to conform to the plan of having one responsible head, to which all others shall be amenable."

The second article is on the "Sequences of Neurasthenia," by Dr George M. Beard of New York. Dr Beard is already well known for his able descriptions of this and other nervous diseases. Among the sequences which he notices are hysteria and hystero-epilepsy, general neuralgia—that is, neuralgic pains flying about in different parts of the body, as distinguished from fixed and local neuralgias.

He considers that drunkenness is often the result of a weak and irritable diathesis. "Indeed," he writes, "the main cause of the inebriety in this country and in all highly civilized countries is the increasing nervousness of the times." Others afflicted with neurasthenia take to opium-eating. Dr Beard denies that neurasthenia has any tendency to lead to spinal sclerosis. No doubt he observes, the symptoms of neurasthenia sometimes resemble the symptoms of sclerosis, but their fundamental character is quite different.

In the next article Dr C. H. Hughes inquires into the significance of patellar tendon reflex. We question very much his statements that the majority of observers have ranged themselves with Westphal, that the absence of tendon reflex is absolutely pathognomonic of progressive locomotor ataxia or posterior spinal sclerosis. Many cases have been published in European periodicals where the tendon reflex was absent in healthy individuals, and to this list Dr Hughes adds three instances. One of his patients, who had ataxia with aphasia, would likely be regarded by Westphal as a case of cerebral, not of spinal, disease.

There is a translation of the studies on cerebral thermometry in the insane by Drs Maragliano and Sepilli, a valuable article, which well deserves the trouble which has been taken by the translator, Dr Joseph Workman. It is completed in the second number. It is impossible to make a journal of this kind sufficiently interesting without recording what is being done by observers elsewhere, and the resumé of information collected from different medical periodicals seems to be made with care and judgment; indeed, so great is the desire of the editor to do justice to foreign observers, that the proportion of original matter in the second number is somewhat smaller than in the first.

The leading article in No. 2 is a reprint of Dr Isaac Ray's paper on "Recoveries from Mental Disease," in reply to two articles by Dr Pliny Earle which appeared in the first number of the *Alienist*, entitled "Subsequent History of twenty-five Persons reported recovered from Insanity in 1843," and "The Curability of Insanity and Recoveries from Mental Disease." Dr Pliny Earle's inquiries showed that relapse was common in cases of insanity discharged as cured, and that few of those stated to have recovered remain sane for the rest of their lives. Indeed, as most experienced physicians know, a complete and thorough recovery from insanity is a rare event. Dr Ray's reply does not weaken these disagreeable conclusions. He claims to have fairly made the following "points":—

1. Those qualities of temperament which lead men to unduly magnify their achievements are as common at one time as at another.
2. The practice of reporting cases instead of persons has not been confined to any particular period; and therefore, while it may vitiate our estimate of the curability of insanity, it cannot make the pro-

portion of recoveries larger or smaller at one period than at another. 3. Cases marked by high excitement entered our hospitals in a larger proportion to those of an opposite character fifty years ago than they do now. 4. Under the influence of highly civilized life, the conservative powers of the constitution have somewhat depreciated, and to that extent impaired the curability of insanity. 5. During the last fifty years, cerebral affections, in which insanity is only an incident, have been steadily increasing, and thus diminishing the proportion of recoveries."

A Manual of Diseases of the Throat and Nose. By MORELL MACKENZIE, M.D. Lond. In 2 Vols. Published by J. & A. Churchill.

AT present we have only the first volume to deal with, which is devoted to diseases of the pharynx, larynx, and trachea, each being treated of in a special section.

First we have the anatomy of the pharynx, and a description of the instruments used in treating disease of this part, especially the various forms of tonsillotomes which have been devised for excision of the tonsils. These are mostly complicated, and consequently expensive, and probably not to be found in the armamentarium of every practitioner, notwithstanding the author's remark, when speaking of the relative merits of the tonsillotome and the bistoury and forceps, "It is obvious that the former instrument ought to be used in all but exceptional cases." In describing herpes of the pharynx, we have pointed out, and correctly so, the occasional great likeness between the fauces in an individual so affected and the same part in one ill of diphtheria, sometimes so similar that the most experienced practitioner may be deceived as to the nature of the disease he has to deal with, and probably not unfrequently the origin of the wonderful cures of the more grave disease we have so constantly reported in our medical periodicals. Dr Mackenzie points out how phthisis of the pharynx is sometimes mistaken for syphilis, and tells how to distinguish the one from the other. Diphtheria and croup are both fully treated of; the chapter on the former being, however, almost word for word with what he has already published in his essay on diphtheria some years ago. In that upon croup we find a good and short account of the difference between these two diseases, from both a pathological and clinical point of view, well worthy of notice. There are also a couple of tables, showing the average mortality after tracheotomy in 4663 cases as 1 in 4·18.

Section II. treats of the larynx, but there is not much new matter to remark upon, most of it having already appeared in his other works. Under the head of non-malignant and malignant

growths, the author gives a table of the 19 reported cases of extirpation of the larynx up to date, from which we find three were cured, or remain so till now, the others dying sooner or later from recurrence of the disease.

Section III. deals with the trachea.

This the first volume of the work is most carefully got up, and is, in fact, a small encyclopædia upon the subject treated of, and well worthy of a place upon the medical man's book-shelves, although perhaps rather a made-up book. The illustrations are numerous, and, although not all new, are exceedingly well executed.

Archives of Laryngology. Edited by LOUIS ELSBERG, M.D., and others. Published by G. P. Putnam's and Sons, New York. Vol. I. No. 1.

THIS is a new quarterly journal, devoted to the specialty of laryngology, and which, from the first part, promises well.

The editor opens with an article on the microscopical study of papilloma of the larynx, illustrated by a couple of fine woodcuts.

A series of short translated papers follow, viz., by Dr Voltolini on operations in the pharyngo-nasal space; by Prof. Gerhardt on cricoid perichondritis caused by decubitus; and by Dr Heinze on cysts of the vocal bands.

Dr Carl Seiler of Philadelphia commences a paper on researches in the minute anatomy of the larynx, normal and pathological, with a capital description of his methods of investigation, as to preparing microscopical sections, staining them, etc.

Dr Lange of New York gives a successful case of extirpation of the larynx for an apparently malignant growth, the date of writing the paper being three months after the operation, and when the patient, a man, was doing well. The writing of this article is to British eyes somewhat stilted; e.g., he writes, "The size and location of the neoplasm easily explained the inefficient closure of the *introitus laryngis*, it everting the epiglottis and preventing the *radix lingue* from being turned down, etc." And again, "To inform myself as to the nature of the tumour I punctured it by means of an *akidopeirastic* instrument"—whatever that may be.

The other articles are, on preliminary laryngoscopy upon the cat, by Dr Wilden; and a case of retropharyngeal tumour, by Dr Cabot of Boston.

The remainder of the number is made up of clinical notes, notices of transactions of American societies, reviews and book notices, with a report for the quarter and abstract of laryngological literature.

We hope to see more of this new addition to our medical serials.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LIX.—MEETING IX.

Wednesday, 7th July 1880.—Dr P. HERON WATSON, *President, in the Chair.*

I. *Professor Grainger Stewart* introduced a patient who had for five years been affected with a rare form of disease. The points of chief interest were—1st, That occasionally, during the past four years, ecchymosis had suddenly and spontaneously occurred in the eyelids, at first only after exertion, latterly without apparent cause. There was very little tendency to hæmorrhage elsewhere, no scorbutus nor hæmophilia. 2d, That the hair of his head, face, and body had become scanty and attenuated, the individual hairs of the beard having become soft like those of the head. 3d, That for upwards of two years the patient had had chronic laryngitis, with occasional ulceration. 4th, That the muscular fibre of the heart and other muscular structures was enfeebled and relaxed. But the patient was certainly free from syphilis, and had not been losing weight. Treatment tried had not been successful.

II. *Professor Spence* showed—1. The LARYNX and TRACHEA of a young gentleman, æt. 12, who while playing with a puff arrow during a deep inspiration, drew it into the air-passages. He was seen by Dr Bruce, who found the left lung dull. He was then seen in consultation with Professor Sanders by Prof. Spence. The latter decided to perform tracheotomy, both to save the risk of immediate suffocation and also with the hope of being able to remove the foreign body. The operation was done by the thermo-cautery, and was easy and bloodless. The puff arrow could not be felt. The young lad continued well, and some weeks afterwards another attempt was made to remove it, again without success, though ingenious probes, devised for the purpose, passed far into the bronchi. No bad result followed. A third attempt, also unsuccessful, was followed by a pleurisy which was relieved by aspiration, and then by an empyema which was emptied by two openings, after which the patient gradually sank. The autopsy showed an empty granulating pleural cavity, the lung in a state of solid œdema though not hepatized. After a careful dissection the foreign body was found lodged crosswise in a secondary bronchus; and the worsted which formed the “feather” decolorized and firmly impacted, so that the needle could not have been pulled out by any instrument even if seized. 2. The PARTS concerned in a case of AXILLARY ANEURISM.

which when admitted to hospital was of large size, projecting the pectoral muscles forwards, and yet had been treated abroad by blisters, friction, and liniments. Operation was proposed, but refused; a consultation was held, and a dulness was discovered, pointing at aneurism of aorta and consolidation of lung. He soon afterwards died. It was found that the axillary aneurism had penetrated the ribs by causing absorption, and formed a tumour inside the chest as large as a goose egg,—a good warning against operation in similar cases where any dulness of chest is to be made out.

III. *Mr Joseph Bell* then showed a portion of the RADIUS expanded and broadened out forming part of the sac, which also was kept *in situ*, of an OSTEO-ANEURISM, the result of injury, on which he had lately operated. The patient, a muscular young man, was shearing a sheep, when by the movement of the animal the sharp blade of the shears deeply penetrated his right forearm. This was followed by a high spout of blood; he bound the arm tightly up, and his master put on first a plaster, under which the wound healed, and then a poultice to relieve pain. The small wound healed quickly, but a large pulsating tumour formed, filling up the space between the bones and threatening to burst, giving pain. It did not seem to be connected with either radial or ulnar arteries. Mr Bell operated by a free longitudinal incision, exposed the sac, and then laid it open, when it was found to communicate directly with the radius by a circular depression about two lines in diameter, from which blood welled up whenever the tourniquet was slackened. He then carefully dissected and isolated the sac of the aneurism, tracing it all round to where it became continuous with the expanded bone, then elevating the periosteum from the bone, he removed by pliers and chain-saw about three inches of the whole thickness of the radius wide of the aneurism. This being done, the posterior interosseus alone was found to bleed. The patient was making a good recovery. The sac was wonderfully thick and the bone expanded considering the short time (two months) which had elapsed since the accident.

IV. *Dr A. G. Miller* showed a CYST which he had removed ten days before from the neighbourhood of the inguinal region of a young lady. From the contents of the cyst it seemed to have been connected with the round ligament of the uterus. It was placed over the external abdominal ring, but was very freely movable under the skin. The wound was dressed with a small pad of carbolized gauze covered with a large pad of salicylic cotton retained in position by a spica elastic bandage. The dressing was not removed for ten days, when the wound was found to be perfectly healed.

V. *Dr McGillivray* then showed for Dr Thom, junior, of Crieff, the following specimens:—PATELLAR BURSA TUMOUR removed from

right knee of female farm servant. Had existed for thirteen years, but gave no trouble till an attack of acute inflammation supervened in and around the tumour, which necessitated removal. Contents—thin purulent matter. Wound healed without any trouble. No history of much kneeling. ELBOW-JOINTS.—No. 1. Removed from right elbow of girl, delicate, strumous, of two years' standing; no history of injury. Born in Perth Infirmary. Joint was ankylosed, and three sinuses led down to interior of joint, three others led to bare bone. Much inflammatory thickening of soft parts and great pain. Removed by single longitudinal incision, as well as half of shaft of ulna for one-half of its length by gouging for necrosis of that part. Healed well; made good useful arm. Patient improved in health, and can write with facility. No. 2. Patient, girl eleven years old. Left arm. Three sinuses existed; two leading to interior of joint. History of injury: strumous family history; joint firmly ankylosed for eighteen months. Could not be moved under chloroform. Removed by single longitudinal incision. Healed well. Good useful arm with free movement.

VI. *Dr Heron Watson* showed several recent pathological specimens. The first two were portions of OMENTUM removed from patients suffering from inguinal hernia. The one case was that of an old man who had suffered for many years from a large inguinal hernia, which no form of truss was able to restrain. He first operated extraperitoneally, cutting down on the pillars of the external ring and sewing them together with fishing gut. The wound healed by first intention, but the patient being restless and insisting on getting up, the hernia still tended to protrude. On this account he opened the sac and removed half a pound weight of omentum, stitching up the orifice as before. This also healed by first intention, and the patient had since returned home cured. The other case was that of a middle-aged man, who had suffered for long from a moderately sized inguinal hernia easy of reduction, but impossible of retention. In this case the portion of omentum was found attached to the cord. The pillars of the ring were brought together with fishing gut, and the wound healed by first intention. The patient had, however, for about ten days, without any apparent cause, recurring attacks of pain, with slight peritonitic symptoms. These passed away under treatment, and the patient was now quite well. The third specimen was one-half of the LOWER JAW removed for recurrent sarcoma. The tongue and the front portion of the jaw had been removed some time previously. The patient had made a good recovery. The fourth preparation was a FIBRO-CARTILAGINOUS TUMOUR, the size of an orange, which had grown from the right palatal bone of a young woman. It projected into the mouth, pushing the soft palate before it. Laying the patient with her head hanging over the end of the table, he had been able to remove the whole

apparent mass by means of the thermo-cautery, but on further examination he discovered that portions of the tumour still remained, one passing upwards beneath the mucous membrane of the posterior nares, the other downwards and outwards, along the course of the internal pterygoid muscle. To complete the extirpation of the diseases he was, therefore, unwillingly obliged to sacrifice the palatal and alveolar portion of the upper jaw, leaving the orbit unharmed, while by means of an incision along the alveolar edge the soft parts covering the hard palate were detached from the bone and retained. The remaining portions of the tumour being now easily removed, the parts were brought together, and the girl made an uninterruptedly good recovery, no disfigurement resulting, and, but for the loss of the alveolar edge and teeth of one side, the roof of the mouth looked perfectly natural. Numbers five and six were cases of excision of the KNEE-JOINT for gelatinous disease; both patients were doing well. Seven was a case of commencing disease of the ELBOW, in a boy. He had excised the joint, and the patient had since gone home cured. Eight was the case of a child, in whom the EXTERNAL CONDYLE of the HUMERUS had been fractured into the elbow-joint some time previously. The portion of bone being displaced prevented complete flexion; he therefore removed it, and the case was doing well. Nine was a URIC ACID CALCULUS weighing a quarter of a pound. This he had removed from an old gentleman, aged seventy-five; there had been no undue stretching of the parts, as on seizing the stone, the outer layers gave way, and it was therefore removed in fragments. There had been no bad symptoms, the tube being removed on the third day, and most of the urine passing immediately thereafter by the urethra. Ten and eleven were cases of amputation at the ANKLE-JOINT for long-continued disease. Twelve was a necrosed portion of BONE, removed from the lower end of the tibia. The patient had some time previously sustained a compound dislocation of the ankle-joint. As the parts remained immensely swollen with numerous sinuses, he was sent from the country to be under his care. On examination, bare bone was discovered, and on cutting down on the internal malleolus, and removing it, the lower and outer portion of the tibia was found loose and necrosed. This was removed, and the patient was doing well. The last specimen consisted of the middle portion of the os calcis removed from a boy on account of long-standing disease. A loose and necrosed portion of bone was found in the centre. The tuberosity and anterior portion of the bone were left *in situ*. Dr Heron Watson also exhibited a microscopic specimen, prepared by Dr Hamilton, of the FIBRO-CARTILAGINOUS TUMOUR of the PALATE.

VII. Dr Foulis then showed a piece of wall-paper removed from the drawing-room of a house near Edinburgh. Every member of the family in the house, for a number of years past, had suffered from bad health—chronic dyspepsia, asthma, crops of boils, pains

in the limbs, and nervous symptoms being the chief affections. Suspecting the drawing-room wall-paper contained arsenic, Dr Foulis had a portion of it analyzed by Dr Morrison, Professor Crum Brown's assistant. The paper was a beautiful green and white one, of French manufacture, and had been on the drawing-room wall for more than twenty-eight years. On burning a piece of it at the gas flame, a most disagreeable smell of garlic was given off by the fumes. The analysis showed that in each square foot there were 24 grains of arsenious acid. The area covered by the paper was 427 square feet. The quantity of arsenious acid, therefore, in the whole wall-paper was $427 \times 24 = 10,248$ grains, a quantity sufficient to kill more than 1000 persons. Dr Foulis regretted he was not able to state how much arsenious acid the paper contained when it was first put on the wall twenty-eight years ago.

VIII. *Dr Foulis* then read his paper on THE TREATMENT OF ASPHYXIA DURING THE ADMINISTRATION OF ANÆSTHETICS, which will appear in a future number of this Journal.

Professor Spence said that the facts brought forward by Dr Foulis were well known to all anatomists, and that in his work on Surgery he had shown the importance of pushing forward the hyoid bone and the tongue by the forefinger. He believed that far too much was being said at present as to dangers of chloroform, and he referred to cases of death which were not due to any interference with the respiration, but to disease of the heart or other accidental circumstances. If the head was kept on one side, and the chin not allowed to sink down on and rest on the neck, the respiration would not give much trouble. He would strongly deprecate anything like alarmist doctrines as to chloroform administration and any multiplication of instruments.

Dr Smith said that, like Professor Spence, he was one of the few present who had administered chloroform from the date of its introduction in 1847, having exhibited it during these last thirty years somewhere about 5000 times. He had drawn attention to the matters alluded to by Dr Foulis in various papers and some communications before the Society, so far back as between the years 1858 and 1866. In 1865 or 1866 he had pointed out the dangers of asphyxia occurring during anaesthesia, and adduced the statistics and post-mortem appearances of a number of cases to show that toxic death did not invariably occur, but that in many cases death was accidental and very frequently owing to asphyxia. In more than one of these papers he had shown that hooking forward the base of the tongue by means of the fingers, possessed advantages over the mode of dragging it forward by artery forceps, as had just been stated by Dr Foulis. Dr Smith had also in these papers maintained the importance of position in anaesthesia, more particularly position of the head and neck, as well as the necessity of full anaesthesia being induced before commencing to operate—a matter

which has since that time been enforced by various authors. He thought the Society much indebted to Dr Foulis for his paper.

Professor Simpson having made some remarks,

Dr Shand observed that as the discussion had turned very much on the mode of safely administering anæsthetics, he felt called on to state the result of his experience of the administration of chloroform on a large scale at a time when that anæsthetic was comparatively new, as early as in 1849, when he saw it given to the wounded in the actions that took place in the neighbourhoods of Mannheim, Heidelberg, Carlsruhe, and lastly the siege of Rastadt. He remembered that at that time there were no casualties from its use, and that it was given freely and copiously in hollow sponges. As the only Englishman, at least medical, there, he was naturally regarded as an authority on the subject, which had been introduced to the profession by a countryman, and was occasionally referred to for an opinion regarding its effect. The impression then received as to the mode of administration in full doses at first had been strengthened by the experience of an extensive general practice of more than a quarter of a century, and he now begged to state that the opinion briefly expressed is, that in suitable cases—for there will be exceptions at times—more danger arises from the administration of chloroform in small minim doses than freely administered drachm doses with plenty of air about. The lateral position had been alluded to, and *Dr Shand* must say that he had likewise, as a general rule, used it when practicable, placing the head so that the saliva flowed readily from the corner of the mouth; thereby it was prevented from reaching the epiglottis, or failing that the œsophagus and stomach. In the free inhalation of chloroform he had nowhere been more rewarded with success than in cases of the last stage of delirium tremens, and in one case, although epilepsy supervened during its administration, he fortunately decided on its continuation, and in a few seconds the epilepsy passed off, and a calm sleep of eighteen hours followed, from which the patient, as in other cases, awoke comparatively well and remained so. All of these cases he regarded as tributes to the fame of the late Sir J. Simpson. He only remembered one instance of temporary danger during the administration of chloroform in his hands, and as the case was in some respects unique he would briefly narrate it. The case was one of gunshot—not from a Martini-Henry rifle certainly, nor was the projectile a conical bullet or shell—the weapon was a veritable Brown Bess, and admitted of such a bullet as the one he now produced, which was a pebble or chucky-stone. This stone was accidentally lodged by one boy in the left hip of another boy, his companion, and on examining the case *Dr Shand* felt satisfied that he felt the foreign body behind the trochanter, and close to the posterior edge of the acetabulum. On cutting down, it could be felt more distinctly as the incision was deepened, but suddenly suspicious stertorous breathing supervened, and without loss of time the lad

was lifted and carried to an adjoining window hastily thrown open, and with the help of producing artificial respiration was soon restored to normal respiration. After being replaced on the bed and a little more chloroform administered, the operation was proceeded with, and just as the forceps were being introduced to seize the stone, he (Dr Shand) was aware of being hit hard on the head and forehead by some weight. Feeling his sight obscured by what he found to be blood, he observed a fine cat retreating by the door. It had been beside the boy, and evidently disapproving of the whole affair, made a spring at the doctor's head and then beat a hasty retreat by the door. Dr Shand then secured the pebble and finished the operation. He thought this case interesting in other surgical aspects, which he might possibly have to allude to in some subsequent discussion in the Society. He concurred in thanking Dr Foulis for bringing so important a subject as anaesthetics before the Society.

Dr James Carmichael thought that Dr Foulis had ably treated of what might be called the mechanical cause of death by asphyxia during administration of anaesthetics. From what Dr Foulis said, he inferred that he was of opinion that this was the most common mode of the production of asphyxia, but it must be remembered that this was not the case. We knew that during administration of chloroform the respiration gradually became shallower and interrupted, from paralysis of the entire muscular respiratory apparatus, the poisoned blood acting on the respiratory centre in the medulla and producing this effect. It would be interesting to know whether this or the falling back of the tongue after the manner described by Dr Foulis was more frequently the cause of peril to the patient under anaesthetics. Too great care could not be paid to the respiration in all cases during the administration of chloroform. If on the first signs of interference with the respiratory function the anaesthetic be withdrawn, little danger need be feared. Syncope was a more rare cause of death during chloroform administration than asphyxia.

Dr Foulis, in reply, said he had not wished to raise a discussion on the value of anaesthetics, or on the different modes in which death took place during the administration of anaesthetics. All agreed that in any case of impending death during the administration of an anaesthetic artificial respiration was the best means of treatment; but artificial respiration was of little value if air was not made to pass *freely* in and out of the lungs. The object of the paper was to show that the tongue, the epiglottis, and aryteno-epiglottic folds occasionally act as valvular impediments at the orifice of the windpipe to the passage of air in and out of the lungs, and that by the use of a simple instrument, such as the glossotilt, or even the handle of a large spoon, it was possible to raise up the dorsum of the tongue from its contact with the posterior pharyngeal wall, and at the same time to raise the epiglottis and to render

tense the arytaeno-epiglottic folds; and that when this was accomplished there could not possibly be any obstruction to the passage of air in and out of the lungs by those structures during the movements of artificial respiration. It was generally taught by surgeons that dragging on the tip of the tongue with catch-forceps was sufficient to effect all this, but Dr Foulis showed that this was not the case. It was not possible to stretch the aryteno-epiglottic folds except by hooking forward the hyoid bone and the base of the tongue; and this could be most easily done by using the simple instrument in the way he had described.

IX. *Mr Joseph Bell* then read NOTES OF A CASE OF ABSCESS IN ABDOMINAL CAVITY, which will appear in a future Number of this Journal.

Mr Chiene related a case of general peritonitis, in which a similar swelling filled up the rectum and rendered the passage of the finger a matter of great difficulty. The diagnosis in that case was effusion into the recto-vesical pouch. The swelling gradually subsided, and did not require opening.

Dr Shand made some observations on cases he had seen.

X. *Dr Brakenridge* then read for *Mr Beck* a paper on the DIAGNOSIS OF ABDOMINAL ANEURISM, which will appear in a future number of this Journal.

Dr Black remarked that it was more difficult to discover real aneurisms than fictitious ones, especially in the abdomen, and that he had seen two or three such cases in military hospitals that occasioned prolonged conjecture as to their nature. In one case the persistent pains in the back were attributed to lumbago and rheumatism, for which the soldier was invalided, and in another the constant pains were referred to stone in the ureters and kidneys. It was not until the tumours caused by rupture of the sacs and extravasation of their contents manifested themselves that any certainty was felt of the existence of aneurisms. The stethoscopic indications were more obscure in abdominal aneurisms than in those of the thorax, and even an abnormal pulsation might not indicate anything more than a temporary and local dilatation of a vessel.

After some remarks from *Dr Brakenridge*,

Mr Joseph Bell expressed the pleasure it had given him to hear this well-reasoned and thoughtful paper. Surgeons were well aware of the extreme difficulty in the diagnosis of abdominal and pelvic aneurisms, and the frequency with which mistakes were made even by distinguished surgeons.

Professor Sanders remarked on the liability of students and young practitioners to mistake abdominal pulsation, a frequent functional disorder, for aneurism. In his opinion the feeling of a tumour was necessary for the diagnosis of aneurism; mere pulsation, even attended by pain, was insufficient.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XXXIX.—MEETING XII.

Wednesday, 9th June.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Professor Simpson* showed PHOTOGRAPHS of the apparatus which Dr Poullet of Lyons had employed in his application of the graphic method to obstetric phenomena.¹

II. *Dr Rattray* showed (1), LEAD WEIGHT swallowed, weighing gr. xxx.—A. M., æt. 3 years and 3 months, when playing with his brothers, swallowed this lead weight on 24th January 1877. Dr R. was soon in attendance, and found him complaining of pain and weight in the region of his stomach. He looked pale and haggard. Emetics were tried, but no good result followed. Next a mixture was prescribed containing Magnes. sulphatis ʒiss., Sodæ sulphatis ʒiss., Tinct. card. co. ʒij., Infus. sennæ, ʒvj. Sig., one-sixth part every 4 or 5 hours till the bowels are freely opened. During the time the weight was in his stomach and bowels, about 72 hours, he manifested no symptoms of loss of power or numbness. He expelled the weight in a semi-solid motion on the afternoon of January 27th. He had the last dose of medicine at 7.30 on the evening of 26th. In all Dr R. had to administer 5 doses of this saline before the foreign body was expelled. He made an excellent recovery. (2), A FINE NEEDLE which he had extracted from the abdomen of a young girl on July 13, 1879. On the previous day it presented about 3½ inches below and to the left of the umbilicus. She informed him that nine years ago she swallowed this needle, and suffered pain and uneasiness for a few days only. Dr Rattray had no difficulty in extracting it.

III. *Professor Simpson* then read his paper on DYSTOCIA FROM SACRO-COCYGEAL ANCHYLOSIS, which will appear in a future number of this Journal.

Dr Halliday Croom was interested in the paper. For years he had been in the habit of referring to this form of anchylosis as a cause of dystocia, but had never yet seen it, so that he was glad to hear of a well-authenticated case. A few days ago Dr Simpson saw with him a patient with a firm coccyx turned forwards, the whole pelvis being of a malacosteon type. It was important to get a case of *bona fide* sacro-coccygeal anchylosis, as it was said to be more rare than inter-coccygeal union. He would like to know if the anchylosis had been recognised early, and when.

Dr D. Wilson had seen two cases where he thought this anchylosis protracted labour. He was interested in the protraction of gestation. It corresponded with the case brought before their Society by Sir James Simpson. The lady was not primiparous, however.

¹ *Du Tocographie. Application de la méthode graphique aux accouchemens.*

Dr James Ritchie had been taught that sacro-coccygeal ankylosis was one of the causes obstructing labour, but that it was rare. He had met with it, however, in three successive pregnancies of one patient. In her first confinement he found the coccygeal and sacro-coccygeal joints ankylosed and the coccyx bent forwards. This arrested the head, so that he had to apply forceps after endeavouring without success to fracture the ankylosis with his thumb. While making traction he heard a snap, and delivery was unimpeded. At her next confinement the same thing happened; but at her third one he was able to break down the ankylosis manually.

The President felt greatly interested in *Dr Simpson's* paper, as this ankylosis had, to his mind, existed more theoretically than practically. Such ideas could be corrected only by carefully recorded cases. He had delivered a good many primiparae at ages from 40 to 45, but had not found the sacro-coccygeal joint firm in any of them, although in some the perineum seemed almost ankylosed. It was his impression, however, that it was more common, especially in deformed pelvises, than *Dr Simpson* believed. He had often looked for it, but had only met with one instance about three weeks ago, in a case he saw with *Dr Rosa*. The patient was not over 30, and had a flat pelvis with a conjugate at the brim of $3\frac{1}{2}$ inches, and narrowing at the outlet from the coccyx being ankylosed and bent forwards. *Dr Rosa* had applied forceps and got the head partially through the brim when he (*Dr Macdonald*) arrived. Ultimately the child was extracted alive by forceps, the coccyx, just as *Smellie* says, not obstructing labour much. This arose from the transverse widening of the outlet, and the fact that the head passed it with its antero-posterior diameter in the transverse of the pelvis there. His opinion, therefore, was that sacro-coccygeal ankylosis was not so frequent as books gave us to believe, but more common than *Dr Simpson* had stated.

Professor Simpson thanked the Fellows for their remarks. He recognised the ankylosis in his case early in the first stage. *Senior* says that junction between the first and second coccygeal joints happens earlier than that between the sacrum and coccyx. He had narrated the case because such records enabled them to verify book statements. He had hinted in his communication that there might be various degrees and kinds of it. He was indebted to the Fellows who had given their experience, especially to *Dr Macdonald* and *Dr James Ritchie*.

IV. *Dr William Wilson* then read his CASE OF EXTRAUTERINE PREGNANCY, which will appear in a future number of this Journal.

Professor Simpson thought they were exceedingly indebted to *Dr Wilson* for his carefully recorded and extremely interesting case. He sympathized with him in his difficulty as to diagnosis.

Dr David Wilson was interested in the case. It recalled one he

had lately read, where the same difficulty of diagnosis between irritant poisoning and extrauterine pregnancy had arisen. Such cases were interesting to the medical jurist and practitioner. The only help in settling in favour of rupture of a Fallopian tube pregnancy in Dr Wilson's case was the exsanguined condition of the woman. In a recent case of extrauterine pregnancy he himself had, both he and Dr Matthews Duncan failed to recognise its true nature.

The President agreed with the Fellows as to the praiseworthy nature of Dr Wilson's paper. It reminded him of a case of interstitial pregnancy the uterus of which was sent to him by Dr Baird of Perth. This specimen he had the pleasure of showing to the Society. Members will recollect that in this case also the sudden nature of the death of the patient led to suspicions. The post-mortem, however, cleared up the nature of the case.

V. *Dr Hart* then read his paper on the NATURE OF PROLAPSUS UTERI, which appeared at page 102 of this Journal.

On the motion of *Dr Halliday Croom*, it was agreed to defer the discussion of Dr Hart's paper until their next meeting.

MEETING XIII.

Wednesday, 30th June.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Dr C. E. Underhill* showed a HYDROCEPHALIC FETUS which he had delivered with some trouble without perforating. The case was a breech, where difficulty was met with after the trunk was born. When Dr Underhill was called the arms and head were arrested. The former were got down with difficulty. Binarily the head did not seem too large, and therefore Dr Underhill did not diagnose the hydrocephalic condition, although the practitioner in attendance expressed his belief that such was the case. It was ultimately expelled, and the mother was now well.

II. *Dr Macdonald* showed a UTERINE POLYPUS, about the size of a walnut, which he had removed from a patient in his ward who had previously been in the Inverness Infirmary. The case was one difficult of diagnosis, as the cervix was long, the outer os closed, and the chief symptoms were pain and bleeding. The uterus felt hard like a fibroid one. As there was some perimetritic irritation present when the patient was admitted, he did not use a tangle tent until this was subdued. He then found this pediculated fibroid attached to the posterior part of the body of the uterus, and removed it with scissors. Fibroid degeneration of the anterior wall was also found, as well as a somewhat large submucous fibroid working its way towards the interior of the uterus. The patient had been much improved, although this, of course, could not be a permanent condition.

III. The adjourned discussion on Dr Hart's paper on the NATURE OF PROLAPSUS UTERI was then resumed.

The President remarked that Dr Hart's demonstration of the anatomical and physiological relation of the perineum was excellent. The great merit of the paper, he conceived, was that Dr Hart had established upon an anatomical basis the views already clinically demonstrated by the best observers. It was extremely important to urge upon the profession, as Dr Hart, following Dr J. M. Duncan, had done, that the true view of uterine prolapse was a hernia, not of the uterus only or specially, but of the entire lower segment of the abdominal contents. With every word he said in that respect, as also in regard to his views of the causation of prolapse, so far as he understood Dr Hart, he was prepared to agree. He was particularly struck with the explanation offered in regard to the relation of the perineum to prolapse. He thought Dr Hart had demonstrated the true relation of the perineal body to the accident, as it always seemed to him that both those who strongly urged the importance of the perineum as a means of preventing prolapse and those who asserted that its effect in that direction was *nil* were wide of the mark. The explanation of the true bearings of lesion of the perineum as weakening the anterior part of the posterior or sacral segment of the pelvic diaphragm seemed perfectly satisfactory. As a matter of practical importance, it was in the highest degree necessary that accurate views of the mechanism of prolapse should be entertained by the profession, and he could hardly imagine a more clear, satisfactory, or convincing account of it than Dr Hart's. He earnestly hoped it would be widely read and carefully mastered, as it would largely contribute to a more uniform and successful management of these cases.

Dr Halliday Croom agreed with every word that had fallen from the President as to the high character of the paper to which they had listened. The paper was the result of very careful study, and he thought that Dr Hart had been peculiarly happy in the manner in which he had dealt with the subject. He thought, however, that in his description of the causation of prolapsus uteri Dr Hart had done but scant justice to the perineum. He gave this body in his paper a very secondary place. Dr Croom regarded the perineum as playing a very important part in the production of prolapsus. Dr Hart, in a paper read to this Society some months previously, had shown the relation of the perineum to the pelvic floor, and with the views brought out in that paper it was difficult to reconcile the statements he had advanced. It was impossible to regard the perineum in any other way than as a direct obstacle to prolapsus when intact, and, when absent or deficient, the earliest factor in the production of the displacement. When uninjured, the perineal body rendered the floor of the pelvis firm and solid. It did more, it acted as a powerful support to the anterior vaginal wall. Besides, it gave to

the vagina its sigmoid shape. This latter, he thought, was often overlooked and yet this sigmoid shape of the vagina had a deal to do with keeping the uterus from descending. Anyone who examined a virgin vagina must be struck with the fact that at the apex of the perineal body the vagina formed a pouch or sulcus, into which, in the normal anteverted condition of the uterus, the cervix is, as it were, received. Rupture the perinaeum, or rather tear the lower end of the posterior vaginal wall, which is equivalent, and the result is that the continuity of the pelvic floor is broken, the vagina more or less gaping, the support removed from the anterior vaginal wall, the sigmoid curve of the vagina destroyed. The consequence was a collapse of the whole structure, a falling-in of vaginal walls, and a dragging down of the uterus. Dr Croom had listened with both pleasure and profit to Dr Hart's admirable paper.

Dr McReild thought intra-abdominal pressure was the great factor in prolapsus uteri. He had seen cases where the perineum was torn down to the anus, and yet no prolapsus had resulted. In a recent case he had made the patient rest and wear a pair of elastic stays. This had caused great benefit.

Dr Hart thanked the Fellows for their reception of his paper.

IV. *The President* then read his QUARTERLY REPORT OF CASES TREATED AT THE ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL, which appeared at page 97 of this Journal.

Dr McReild remarked that in perineal injuries he only inserted his stitches skin-deep.

Dr Keiller thought Dr Macdonald should have been thanked, in the first place, for his valuable report. He himself had suggested the beginning of these reports, and he was consequently interested in their continuance. Dr Macdonald's report was one of the best he had heard. By these reports they would accumulate a valuable amount of statistics. He wished to express his opinion on the silk-worm catgut sutures which had been spoken of so favourably by Dr Macdonald. He had not been so pleased with the results given by them. He wished to know if they did not occasionally get absorbed. At any rate he had noticed that they had disappeared in some cases. In a case recently sent to him from a distance for operation for the repair of the perinaeum split into the rectum, he used the silk-worm gut, but found on the tenth day few stitches to remove, and thought they had been washed away or absorbed. The operation was, however, successful, the lady having acquired the power of retention. In his experience, the silver suture was more to be trusted to in bad cases where great tension existed. He again wished to thank Dr Macdonald for his report.

Dr Gordon thought they were indebted to Dr Keiller for originating such reports.

Dr Croom suggested that the statistics should be drawn up on a uniform plan.

Dr Wm. Craig said this was a matter for the Maternity physicians to settle.

The President, in reply, stated that he had used silk-worm gut sutures largely for the last two years, and now used them constantly both for primary and secondary perineum operations. He had never found them absorbed, however long they were left uncut. He had employed them recently in a very bad perineal tear, and found every one hold. This was a case in which the original tear, running up the rectum for about $1\frac{1}{2}$ inch, had occurred six or seven years previously, so that it proved a difficult operation, and afforded a good test of the gut. Bantock employed them in ovariectomy, and had never seen them absorbed. He thanked the Fellows for their kind reception of his paper.

V. *Dr Croom* then read Dr McDougal's paper on a CASE OF PHYSOMETRA, with remarks, which will appear in a future number of this Journal.

Dr Keiller was somewhat taken aback by the case. It was very unlike any he had ever seen. He had brought the subject of physometra before the Society several times, and suggested various explanations. A summary of his views, from the Society's Transactions, would be found in Dr Tanner's work. He held that usually the air expelled came from the vagina, and not from the uterus, it being first, as it were, drawn in from without by the action of the vaginal walls and their adjacent muscles. This could be demonstrated by placing a woman on her knees. The vagina could then be opened, and air admitted to distend it fully.

Dr C. Bell held that Dr Keiller's explanation might be correct in some cases, but Baudelocque stated that the foetus might be expelled by an accumulation of air in the uterus. Dr Bell was interested in the case, as he at present had a patient under his charge with menorrhagia, and the uterus anteverted, where he was at a loss to explain the escape of air, unless it resulted from decomposition of the blood. He also referred to cases in which the escape of air ceased during pregnancy and returned after delivery. When the air came from the uterus, the proper treatment was to improve the general health, to wash out the uterus with a solution of Condyl's fluid, and, if necessary, to keep in a tube.

Dr Napier narrated a puzzling case where he believed there had been a dual pregnancy.

Dr Hart thought the case a very difficult one to explain. It was curious that if the uterus contained liquid and the latter escaped first.

Dr Underhill made some remarks on the case.

Dr Macdonald thought the case reported altogether a very extraordinary one, and one extremely difficult to comprehend or criticize. Of course they had all seen physometra as explained by

Dr Keiller. Sometimes, indeed, this was a symptom of early pregnancy. There was also no reason to deny the occasional occurrence of collections of air from intrauterine decomposition, so that *a priori* such a one as reported was not absurd or impossible. But the report presented very many points of difficulty. In addition to the objection suggested by Dr Hart, it was difficult to understand how the uterus, at the period of pregnancy assumed in the paper, could distend to the extent described, so as to give rise to a resonant note over so wide an area of the abdomen, without bursting. Then, further, it was very incomprehensible how the uterine probe, a solid body, when passed into the spasmodically contracted internal os, should have allowed air to escape in such torrents. One could understand that to follow the introduction of a catheter, but it did not appear so simple when a solid body such as a sound was used.

Part Fourth.

PERISCOPE.

MONTHLY RETROSPECT OF OBSTETRICS AND GYNÆCOLOGY.

BY ANGUS MACDONALD, M.D.

FIFTY CASES OF COMPLETED OVARIOTOMY by Dr George Grantlie Bantock are recorded in the *British Medical Journal*, 12th June 1880. These are drawn up in tabular form, and constitute the second and third series of twenty-five cases reported by Dr Bantock. In each case the author has noted the age and condition of the patient, the number of children she has borne, the number of previous tappings she has undergone, the extent and nature of the adhesions, the mode of treatment of the pedicle and the side it belonged to, the weight of the tumour, duration of the operation, the employment or non-employment of drainage, the result of operation, the cause of death in the fatal cases, in addition to remarks on cases deserving of note. In his commentary on the cases the author points out a disadvantage attributable to the use of the clamp, namely, the tendency it induces to the formation of ventral hernia. The same condition he has also found to result from the use of the drainage-tube, due perhaps to separation of the muscles by the tube. Besides internal treatment of the pedicle, Dr Bantock believes the use of silkworm-gut instead of catgut in closing the abdominal wound is an important precaution against ventral hernia. The silkworm-gut can be left in situ for a fortnight, if necessary, without the risk of causing irritation. Kæberlé has held that the practice of including the peritoneum in the suture tends to oppose union of the abdominal parietes, but the substitute method he proposes for closing the wound is, in Dr Bantock's opinion, still more hazardous. The occurrence of a sanguineous discharge from the

vagina after ovariectomy has been frequently observed by operators, and has been hitherto explained as being due to an effort of nature to compensate for the sudden reduction of the area of blood distribution. Were this the case as a rule, the author maintains that the larger and more vascular the tumour removed, the more certain would be the hæmorrhage. This coincidence, however, was found not to exist, and, judging from his own observation, Dr Bantock believes that in nine cases out of ten hæmorrhage will be found associated with a short pedicle, and must therefore have a traumatic origin. In regard to the effect of previousappings of the cyst on the prognosis in ovariectomy, the author believes that he expresses the experience of every ovariectomist when he says that he has repeatedly had to regret, during an operation, that his patient had ever been tapped. Inflammation, however slight in extent, set up in the peritoneum gives rise to irritation in vital organs, especially in the kidney, and when the time comes for operation the patient dies because her kidneys are unequal to a little extra elimination. As a preliminary to ovariectomy tapping stands on a different footing, as it may be the means of relieving pressure which is acting injuriously on other organs, and the shock from removing a collapsed cyst is less than would follow the radical operation without preliminary aspiration. A strong argument against tapping arises, he thinks, from the fact that in very large tumours already adherent to the parietes, where the cyst cannot collapse, fluid is rapidly poured out (it may be hæmorrhage) into its cavity, and inflammatory action is thereby set up. Of the fifty cases, ten proved fatal—three from septicæmia, two from chest complication, one from rupture and one from obstruction of the intestine, one from carbolic nephritis, one from exhaustion, and one from shock.

In No. 13 *Centralblatt für Gynækologie* for the present year, Dr Möricke of Berlin contributes a short paper on the much-vexed question of the condition of the mucous membrane of the uterus during menstruation. The author remarks upon the extreme difficulty which an unprejudiced mind experiences in accepting the view that during menstruation the mucous membrane of the uterus is completely or partially lost, since menstruation, which every one allows to be a physiological process, is made in that way to play the part of a degenerative process, and thus becomes essentially pathological. The author ascribes the results obtained by former observers, who maintain the complete separation of the mucous membrane, to the fact that they had examined preparations which were not quite fresh, and holds that the changes which they saw and declared to be characteristic of menstruation were post-mortem changes. Though this sounds rather strongly, it is, the author maintains, correct, and he thinks that every one who is acquainted with the rapid destruction of mucous membranes after death will readily believe the statement, more especially when he knows how

soft and swollen the mucous membrane is during the menstrual process. The method adopted by the author to obtain perfectly fresh preparations, which might withstand the strictest criticism consisted in introducing a sharp curette into the uterus and removing large portions at will at different times. Thereby a large amount of material was obtained, taken during the different days of menstruation, or before and after its occurrence. In every one of these the epithelial covering was completely retained. In no situation was it even partially destroyed: in many places it was sprung over a small extent, being raised up on underlying blood extravasation, but still it adhered together, and cell for cell of the loosened superincumbent portion was sharply outlined and easily to be recognised. These observations were found true on the fresh and on the prepared specimens. On the former no fatty degeneration could be recognised, even with the greatest willingness to detect it.

A NEW DRESSING FOR THE NAVEL.—Dorhn recommends under this title the following arrangement in order to avoid the evil effects which occasionally follow the separation of the cord when dressed in the usual fashion. The newly-born child, after having its navel-string tied and cut, is first washed in the usual manner, after which it is laid on a table, and the remains of the navel-string, as well as the parts round about the navel, washed with a 2½ p. c. solution of carbolic acid. The cord is now tied a second time with a ligature which has been duly carbolized, and the superabundant portion of navel-string cut off with its previous ligature attached to it. A layer of carbolized wool is applied over the stump of the navel-string, and over all a portion of sticking-plaster about the breadth of the hand is firmly fastened. This dressing is allowed to remain till the seventh day without being either aired or renewed. On removing it then, the remains of the navel-string will be found either nearly or entirely separated. In the former case it is cut off with a scissors. The author declares that he has found this dressing satisfactory in twenty-eight cases.—(*Centralblatt für Gynäkologie*, No. 14, 1880.)

ON THE APPLICATION OF IODOFORM IN GYNÆCOLOGICAL DISEASES.—Dr Martin of Berlin communicates a paper to the same journal, giving the results of a series of clinical experiments on the use of iodoform in various gynæcological affections. In the outset, he refers to the recommendations of iodoform made by Greenhalgh, De Marquay, and Völker, the former of whom was the first to recommend its employment in cancer of the cervix, whilst the latter praised its favourable effects in overcoming the pain and the distressing odour of the secretions in this disease. Next he mentions its employment by Kurtz as an absorbent in abdominal tumours. He then goes on to mention the paper of Kisch in No. 52 *Berlin Klinisch-Wochenchrift*, in which he publishes the results of the local

application of iodoform in over fifty gynecological cases. Kisch had maintained that in these cases he had found iodoform an extremely active medicine, powerfully favouring the resorption of exudations, exerting a favourable alterative action upon the secretion of the diseased mucosa, and possessing an essentially lowering action on the exalted sensibility of the parts. Kisch employed a solution of one part of iodoform to ten of glycerine, with six drops of oil of peppermint well shaken up. A plug of cotton wool is steeped in this solution and then applied to the vaginal portion. Some of the solution also was rubbed into the lower part of the abdomen. He affirms that it was especially useful in old cases of chronic metritis. In these, diminution of the hyperplastic swelling, healing of granulations, and arrest of the discharges and neuralgic troubles, accompanied its use. Further, in a few days unmistakable success followed its employment in chronic endometritis, and in papillary and follicular ulcers of the os. He also found it useful in chronic inflammatory affections of the pelvic peritoneum and pelvic connective tissue. In a later paper Kurtz has recorded his experience with it in the treatment of one hundred cases of chronic metritis, cervical ulceration, perimetritis, and parametritis; and claims for it valuable qualities as a sedative to pain and as a prompt agent in favouring the cure of chronic metritis, cervical ulceration, and stimulating the resorption of perimetritic exudations. The author then proceeds to give the results of his own observations upon iodoform, which are by no means particularly favourable to the drug. The most satisfactory results were afforded by the application of iodoform in neuralgias at the climacteric period. The pains were distinctly lessened by external application only. In two cases they were completely cured, but it was only used in seven in all of such cases. It was also used in three cases of eczema vulvæ. Martin found it beneficial in cases of carcinoma of the cervix, especially as favouring granulation after operation, and preventing pain. He also found some advantage in cases of adhesive chronic colpitis, and in colpitis and endometritis of the neck during pregnancy. In eighteen cases of chronic endometritis there was no observable advantage from the use of the drug. In thirty-nine cases of chronic metritis, with unilateral parametritis or with perimetritis, real benefit followed the use of iodoform for a time. The benefit, however, was only temporary. Similar results followed its application in thirty-one cases of chronic perimetritis and parametritis. The author, in conclusion, regards iodoform as an addition to our gynecological pharmacopia, but considers that, so far as his experience leads him, its value ought not to be unduly estimated. The preparation he employs is composed of lard and vaseline mixed, with the addition of two or three drops of peppermint-oil, or some balsam of Peru. In that way the disagreeable smell is better corrected. In the case of some patients the use of the drug had to be given up on account of its disagreeable smell.

DURATION OF PREGNANCY.—In a statistical paper on the occurrence of the first menstruation and on the duration of pregnancy, by Franz Xavier Schlichting, in the *Archiv für Gynaekologie*, Bd. xvi. s. 203, some important facts are related regarding the latter question. They tend to affirm that the variations in regard to the duration of normal pregnancy are more extensive than is usually believed in this country at least. The author's tables were framed from an investigation of the case books of the Munich Maternity from the year 1861 to 1879. They are 456 in number. The average annual number of cases attended in the Maternity was about 1000. Only those cases were selected for the tables in connexion with which the particulars sought for by the author were given. The resulting table contains columns with—1st, the number of the patient; 2d, her age; 3d, the number of her pregnancies; 4th, the date of fruitful coitus; 5th, the last menstruation; 6th, delivery; 7th, duration of pregnancy; 8th, duration of pregnancy after the last menstruation; 9th, the sex; 10th, the weight; 11th, the length of the child; 12th, observations. The average duration of pregnancy in the 456 cases amounted to 269·84 days, in round numbers 270. Naegele's average was 272·56; Hecker's, 272·69; Ahlfeld in the polyclinique, 272; those in the clinique, 268·68; from which he obtains the mean of 269·79, or 270 days. He then states that, assuming the 486 individuals referred to in his tables had been impregnated in one day, the deliveries would have been divided as follows:—in the 34th week there would have been delivered 3 cases; in the 35th, 18; 36th, 16; 37th, 53; 38th, 77; 39th, 118; 40th, 100; 41st, 35; 42d, 18; 43d, 10; 44th, 3; 45th, 3; 46th, 1; 48th, 1. The author found that in those cases where the pregnancy was prolonged, the average weight of the children increased. The extreme duration of pregnancy reaches, according to this observer, from a minimum of 236 to a maximum of 334 days, giving a difference of 98 days (which, notwithstanding that it corresponds with some observations of Ahlfeld, is certainly a large variation, and would need more accurate data than an ordinary hospital record to prove it.—A. M.)

CHRONIC INVERSION OF THE UTERUS.—An account of two cases of this accident treated in Spiegelberg's clinique is communicated to the same journal, p. 233. These had proved themselves irreplaceable by elastic bags, manual or instrumental methods, but are stated to have been successfully treated by amputation by means of an elastic ligature applied round the base, and allowed slowly to eat its way through it. It is interesting to notice that although the cases operated upon proved completely irreducible, in neither case did there exist the slightest adhesion between the adjacent peritoneal surfaces in the funnel formed by the peritoneal surface of the inverted uterus. Even after application of the ligature for several days there did not occur any fresh peritoneal adhesion in either

case. The ligature ate its way nearly through in from 5 to 8 days, after which the sphacelated uterus was removed by scissors or wire ecraseur. In one of the cases all went well, in the other serious symptoms supervened in consequence apparently of spontaneous inversion of the sloughing stump after operation. Both cases, however, ultimately did well. The author recommends the uterus to be amputated as high up as possible, so that in case of spontaneous reinversion of it the stump shall be as small as possible.

CONTRIBUTIONS TO THE MORPHOLOGY OF THE VAGINAL PORTION OF THE UTERUS is the title of a paper by Dr Wilhelm Fischel, *Archiv für Gynaekologie*, Bd. xvi. s. 192. This paper is divided into two heads, comprehending, 1st, what the author calls the congenital histological ectropion of the os uteri; and 2d, the congenital anatomical ectropion of the os uteri. Under the first head the author refers in brief review to the contributions of Klotz, Leopold, and Ahlfeld on this subject, and then proceeds to relate his own observations made by methodical examination of the vaginal portions of uteri of dead-born female children, or of such female children as died within the first days of life. In 10 out of 28 uteri examined, the author found the presence of erosions of the cervix in various forms and sizes. Of these 10 four were taken from dead-born mature female children, two from children a few days old, one from a girl fourteen days old, and one each from a child three, four, and five weeks old respectively. The erosions were well marked, and had frequently the greatest similarity to erosions in the adult. He also observed that he could with the naked eye distinguish two types of the erosions, namely, one with a more silky lustre, and one with a rough, finely granular condition of surface, which could at once be called papillary. The erosions were all covered over with a beautiful single layer of cylindrical epithelium. This epithelium covered the irregular elevations, and dipped down into the depressions which surrounded and separated them. The author comes to the conclusion that the normal, thick, many-layered plaster epithelium is a development from the cylindrical epithelium, and believes that those erosions round the outer os in infants really represent a remaining behind of the normal transformation of cylindrical into plaster epithelium, which commences in early life far down on the vaginal aspect of the cervical portion, and gradually extends concentrically towards the outer os, so as to cover the entire vaginal surface of the cervix. 2d, By congenital anatomical ectropion of the outer os, the author means the occurrence in the virgin uterus of deep transverse fissuring of the vaginal portion, similar to what occurs nearly normally in connexion with every first labour, and which in extreme cases gives rise to the condition known as Emmet's laceration ectropion. The author asserts that he has seen at least one

such case in the virgin, of which he gives a photographic representation, and that he has observed the same condition during pregnancy in the case of patients whom he had every reason to believe were primipara. From this he argues that these observations show that the lateral indentations of the cervix need not always follow an antecedent delivery, but may be of congenital formation. He considers also that the matter possesses great medico-legal import.

CRANIOTOMY AND ITS ALTERNATIVES — CÆSAREAN SECTION, LAPARO-ELYTROTOMY, AND POORO'S OPERATION, is the subject of a paper contained in the *Dublin Journal of Medical Science*, by Dr R. J. Kinkead of Queen's College, Galway. The operation of craniotomy is the only instance in the whole range of surgery where the British profession has sanctioned the destruction of human life, and the author considers that it behoves modern science strenuously to strive to remove such a reproachful procedure from the pale of its authority. It is the teaching of the British school that the safety of the mother is in all cases to be preferred to that of the child, and such teaching has been emphatically accepted and carried out. The justice of such a view, however, is questionable. There is no proof that the life of the child previous to birth should be considered part of that of the mother, and not an individuality as it afterwards is; and we are therefore bound to put it into the scale with the life of a being like ourselves. Assuredly no man would consider himself justified, on any plea whatever, in perforating and breaking down the skull of a child an hour after birth, and subsequently scooping out its brain; and yet modern physiology has shown that there is no adequate distinction between the mental and physiological life of an infant an hour before and an hour after its birth. Before undertaking to perforate a child's head we must have, not the probability, but the assurance, that by reason of the operation, not only will the mother's life not be lost, but that it will not be placed in such danger as if Cæsarean section had been performed. And if it is difficult, often impossible, to tell with accuracy whether or not in a given case a pelvis is contracted in its brim to less than 2 inches, how are we justified in taking the life of the child when by that means possibly the woman cannot be saved? For it has been questioned whether extreme cases of embryulcia are not as dangerous to the mother as Cæsarean section. The life of the child is often sacrificed to give very doubtful advantage to the mother. Modern skill and ingenuity have devised means whereby the operation of craniotomy can be accomplished through a pelvis of much smaller dimensions than in the days of Smellie, but they have also shorn Cæsarean section of much of its danger. From these considerations the rule seems justified, that when the conjugate of the pelvis is 2 inches or less the Cæsarean section ought

unhesitatingly to be performed to save the child if it be alive. The average mortality in Cæsarean operations is given as 1 in $2\frac{1}{2}$; but the average mortality as shown in 70 cases collected by Dr Parry of Philadelphia, where the conjugate measured $2\frac{1}{2}$ inches or less, was also 1 in $2\frac{1}{2}$, without resorting to abdominal section, and these cases were conducted by obstetricians of well-known reputation. Where pregnancy is complicated with malignant disease of the cervix uteri of any extent, we are not at liberty to sacrifice a healthy life on the chance of saving a failing one. Figures show, also, that in the case of ovarian tumours offering obstruction to delivery, the procrastination practice is little less than criminal neglect, and that to wait for the death of the child, or to postpone treatment, hoping for the natural powers to expel the child, is to subject the mother to risks far greater than those attendant on gastrotomy. The author believes that if performed at a period of labour before exhaustion has set in, or structural changes taken place, with reasonable skill and proper precautions, gastrotomy will be found preferable to craniotomy in regard to the preservation of life. For generation after generation it has been taught that the operation of Cæsarean section is almost certainly fatal, consequently it has not been performed until after days of exhausting labour, when naturally the subjects have died. Looking, however, to the causes which produce danger in the operation itself, we must admit that in the operation *per se* there is nothing to account for great mortality. Ovariectomy during pregnancy supplies statistics not markedly inferior to those of the same operation in the non-pregnant state. It is doubtful whether there is greater risk of septicæmia following Cæsarean section than the efforts at embryotomy, for it could not be maintained that septic infection is not as likely to result from bruised, lacerated tissue as from an incised wound. The sources of danger are: 1, Peritonitis; 2, Hæmorrhage; 3, Shock; 4, Septicæmia; 5, Incarceration of intestine. Peritonitis is said to result frequently from the incision in the uterus; and doubtless this is the case when the uterus has been so bruised by long-continued efforts to drive the child through a contracted pelvis as to leave it almost gangrenous. The danger of hæmorrhage from the abdominal incision does not deter the surgeon from operating for ovariectomy or strangulated hernia; while danger of hæmorrhage from the uterus is reduced to a minimum by adopting the measures employed for the prevention of hæmorrhage after labour. If the uterus contracts well there will be no hæmorrhage; and the danger of non-contraction of the uterus is to be found in its inertia from exhaustion, the result of delayed interference. Ergot, ice, perchloride of iron, are means of combating this risk. The danger of septic infection is clear from the nature of the case, yet prophylaxis even here is not wanting, and the first place in this respect must be given to timely operation. Failing to secure proper and permanent contraction, it is necessary to take other steps:—1,

The closure of the wound by suture; 2, Removal of effused fluid as rapidly as it is poured out. The uterine suture recommended by the author is the continuous, in preference to the interrupted one. He uses carbolized catgut thread with a needle at each end, and allows one end to hang out of the lower angle of the abdominal wound, the other from the vagina, so that they may be removed when necessary. Drainage is effected through the natural exit, the os uteri; but when, as sometimes happens, the os cannot be kept freely open, artificial drainage by tubes passed into the uterus, one by the lower angle of the incision, the other by the os uteri, are employed. With regard to shock as a danger in gastrotomy, the author has found from examination of statistics that very few deaths can be referred to this cause. It has thus been shown that the causes of the enormous mortality from Cæsarean section hitherto recorded must be sought for outside the operation itself; and the writer entertains little doubt that the delay in operating is the prime factor of the mortality. The time for operating is not to be decided by hours, but by the indications of approaching exhaustion. Of cases operated on within twenty-four hours of the onset of labour we find, from different writers, such results as 85 per cent., 81 per cent., and 75 per cent. of recoveries; while of those operated on after the lapse of twenty-four hours, we find such figures as 42 per cent. and 32 per cent. of recoveries. By the operation of laparoclytrotomy the dangers of metritis and incarceration of intestine, attributable to gastrotomy, are avoided, while that of peritonitis is reduced to a minimum. Porro's operation, which consists in the entire removal of the uterus above the level of internal os, seems also to possess many advantages over the other methods, whatever its disadvantages may be. It excludes the dangers of metritis, hæmorrhage, and intestinal incarceration, and the danger of septicæmia is also much reduced. The main objection to this mode of delivery is the fact that it renders its subjects sterile for the future, but this reasoning is shown to be invalid, for surely a woman is virtually sterile who has a pelvis so contracted as to preclude the possibility of her bearing a living child. The method, on the contrary, saves a living child, and effectually prevents all future risk. Whether Porro's operation will supplant Cæsarean section and laparoclytrotomy time alone will show.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

SALICYLATE OF SODA IN PETECHIAL TYPHUS.—According to Dr Gregorianz (*La Presse Médicale Belge*), the effect of this salt is very favourable; it lessens the tendency to delirium, lowers the temperature, and prevents renal complications. The progress of the

disease also is influenced: it develops more rapidly, and convalescence is hastened. An inconvenience is its depressing effect on the heart, but this may be obviated by giving it in small doses (5 grammes), and adding a stimulant, such as sherry or brandy, to the mixture.—*Medical Press and Circular*, 4th August 1880.

IODIDE OF ETHYL IN ASTHMA.—I have recently had a very satisfactory experience with this remedy in an obstinate case of asthma. The patient is a youth, about fifteen years old, who inherits instability of nervous action from both parents. He has had obstinate attacks for six years past, especially during the spring and summer months. I ordered him, as recommended by Prof. Lee of Paris, inhalation of the iodide of ethyl. The preparation used was made by Nesreck of Darmstadt, and imported by E. H. Sargent & Co. of this city. After several trials we found the effective dose to be six drops. This relieved the paroxysms as if by magic, and no unpleasant symptoms followed its use. The only new sensation there seems to have been experienced was occasionally a slight sense of numbness in the feet and hands. Under its daily use the intervals between the paroxysms have grown longer, and the severity of the attacks has been relieved. It may be well to add that for some time past, previous to the use of the iodide of ethyl, I had been giving him iodide of potassium with tonics, but the surprising effects upon the paroxysms was clearly due to this new remedy for asthma.—DANIEL R. BROWER, M.D.—*Chicago Medical Journal and Examiner*, July 1880.

LACTIC ACID AS A HYPNOTIC.—Dr Maragliano reports (*Rivista Sper. di Freniatria—Brain*, April 1880) the results of some experiments upon the hypnotic and sedative influence of lactic acid upon the insane. It had been shown by Ranke and Preyer that the artificial introduction into the system of lactic acid and other products of retrograde metamorphosis is capable of producing weariness and sleep. Drs Maragliano and Sepilli tried the effect of lactic acid and lactate of sodium as a remedy for sleeplessness in about a hundred cases of insanity. They found that if given (lactic acid in doses of 8 to 10 grammes, lactate of sodium 12 to 15 grammes) three or four hours before bedtime, they were sufficient to subdue the insomnia of quiet melancholia; but they had little or no effect if given immediately before going to bed. In more decided cases of agitation and sleeplessness they were found far inferior to chloral and morphia, besides being too costly for ordinary use. They were also apt to produce nausea and vomiting.—*The Detroit Lancet*, July 1880.

A MENSTRUUM FOR SALICYLIC ACID.—In the *Louisville Medical News*, May 1, Dr Springer states that salicylic acid is readily soluble in effervescing Vichy or Seltzer water, the former from containing an excess of alkaline carbonates, being preferable. The acid is put into a tumbler first, and mixed thoroughly with a

small quantity of water to prevent its floating, and the glass then filled with the effervescing water and the liquid drunk off. When perfectly dissolved it is said to have a very pleasant, exhilarating, pungent, and sweetish taste.—*Medical Press and Circular*, 14th July 1880.

URÆMIA TREATED BY PILOCARPIN.—We learn from *L'Union Médicale* that, at the Société de Biologie, M. Leven communicated the case of a young girl attacked by parenchymatous nephritis, induced by a chill, accompanied by œdema of the lower limbs, then by suppression of urine, and finally, on the eleventh day of the disease, by uræmia of a convulsive and comatose form. After the first convulsive attack a hypodermic injection of two centigrammes of nitrate of pilocarpin was given; this produced neither sweating nor salivation. A second injection had equally negative results, but shortly after the third injection there was a redness to the extent of two centimètres around the puncture, then sweating over the body, beginning on the forehead, abundant salivation trickling out from the mouth; after several attempts, vomiting of a yellowish fluid. Half an hour after the injection the patient was passing water under her. The vomited fluid contained traces of ammonia. In the evening there was a fourth injection, followed by sweating and sialorrhœa. 60 grammes of saliva contained traces of urea and 0.08 grammes of albumen; 350 grammes of urine contained 3.32 per cent. of albumen and 2.562 per cent. of urea. On the second day of this treatment (the twelfth of the disease) the patient had recovered her senses, and from this time the amelioration progressed; a fortnight afterward the urine contained no albumen.—*Medical and Surgical Reporter*, 3d July 1880.

REMEDY FOR CORNS.—Mr Gezow, an apothecary of Russia, recommends the following in the *Pharmaceutische Zeitung* as a "sure" remedy for corns, stating that it proves effective within a short time, and without causing any pain; salicylic acid, 30 parts; extract of *cannabis indica*, 5 parts; collodion, 240 parts. To be applied by means of a camel-hair pencil.—*Medical and Surgical Reporter*, 17th July 1880.

PERISCOPE OF OTOTOLOGY.

By Dr KIRK DUNCANSON, Surgeon to the Ear Dispensary, 6 Cambridge Street; Assistant-Surgeon, Eye Infirmary; Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

THE ABILITY TO HEAR THE DEEPER MUSICAL TONES OBSERVED IN PERSONS PARTIALLY DEAF, AND THE PHYSIOLOGICAL AND DIAGNOSTIC IMPORTANCE OF THIS PHENOMENON.—LUCAS: *Archiv. für Ohrenheilkunde*, Bd. 15, 1880.—The author wishes to call attention to the aid to diagnosis which is given by investigating the power

of perceiving tones of various pitch. Even in cases which by the ordinary methods of investigation are attributed to catarrh of the middle ear, it happens not rarely that there is a power of hearing low tones in striking contrast to the inability to hear high tones and ordinary speech. It is an important question in these cases how far we may be justified in diagnosing disease of the labyrinth, and in excluding a coexisting disease of the sound-conducting apparatus. With regard to the first point, there can be no doubt that complete loss of perception of high tones, to which the normal ear is so sensitive, indicates disease of the inner ear; but it is different with those cases when the ability to hear high tones is poor only by comparison with the power of perceiving low tones. The writer thinks the piano unsuited for investigating this point, because its high notes have not the piercing intensity which should characterize them. He uses the physharmonika, whose upper notes are extraordinarily clear.

The following case is of particular interest, because the autopsy followed in eighteen days after the clinical examination:—

Case.—The patient was a man of forty-five years, blind and deaf, and with gray degeneration of the spinal cord. Little could be learned about his history, as he could hear only when one shouted in his ear. He spoke like a deaf-mute, dwelling long on each word. Tested by the aid of the physharmonika, he heard the low tones below C much better than the high ones. The m. tympani showed thickened edges on both sides, and a slight rattling was heard on auscultation. After an air-douche the patient heard better. There was a severe laryngeal catarrh.

On autopsy there appeared the usual evidences of chronic catarrh of the pharynx and middle ear. The thickened border of the m. tympani was found to be due to a collection of mucus. The muscles and ossicles of the middle ear were not materially altered. In the internal ear was a patch of sclerosis the size of a pea, on the roof of the vestibule on each side; also a small patch behind the eminentia arcuata. Both internal auditory canals were narrow, and the auditory nerves slender, but, in contrast to the gray degenerated optic nerves, they were of normal appearance. The striae acusticae were almost entirely absent. In the left cochlea were many pigment-cells, numerous otoliths, sometimes in black clusters, and also some glistening corpuscles. The right cochlea showed a similar state of affairs. In the utricle and saccule on both sides were numerous black, chalky lumps, which gave out carbonic acid gas upon the application of acid. On the right side, where the chalky masses were less numerous, the nerve-fibres were plainly seen spreading out, and in the membranous canals were some appearances already described by the author as pathological (*Virch. Arch.*, Bd. xxxv. p. 481). The labyrinthine fluid was scanty on both sides. The base of the stapes was transparent as normal, and freely movable.

This case was observed in 1866, but Lucæ did not publish it at once, in the hope that a companion case might come under his observation. This hope has lately been realized, and an account of the second case will be given later. The case just given is of particular value because of the short interval which elapsed between the clinical examination and the autopsy. It is highly improbable that during this interval any further change took place in the labyrinth, particularly since disease of long standing was shown by the duration of the deafness, as well as by the chalky concretions and sclerosis found. These were probably due to an inflammation of the labyrinth during early life. An important point is the absence of gross changes in the auditory nerves, with co-existent gray degeneration of the cord. This was observed also in two other cases examined by Lucæ. It is a question whether the association of chronic catarrh of the middle ear with a serious affection of the labyrinth was accidental. The gross changes in the vestibule explain the patient's difficulty in hearing ordinary conversation, while the absence of such gross changes in the cochlea accounts for his well-retained power of hearing musical sounds. Why he heard the low tones better than the high ones the writer cannot say. The greatly diminished power of perceiving high musical tones, and the mode of speaking like a deaf-mute, indicated a severe affection of the labyrinth, while on the other hand the *relatively* good perception of low musical tones did not exclude a disturbance of the sound-conducting apparatus. Deaf-mutes frequently respond to low musical notes, but much more rarely to high ones. One deaf-mute examined by Lucæ could hear low tones so well as to derive considerable enjoyment from hearing music.

A practical point to be derived from the case described above is that the patient heard better after the use of the air-douche. This should encourage the hope that even in such a severe case an improvement may be expected by remedial measures.

There is another class of cases where there is a diminished power of perceiving high musical tones while the ability to hear low tones remains normal. To determine whether the perception is normal, the author uses tuning-forks, the high one tuned to a sharp of the fourth octave, the low one to the C of 132 vibrations. In making the investigation he follows the method of Von Conta, with this modification; then he compares the ear of the patient with his own ear. The observer must of course have normal hearing; and in view of the frequent difference between the two ears of the same individual, the same ear should always be used. In making the investigation the observer strikes the fork sharply and holds it close to the ear of the patient. As soon as the patient ceases to hear the sound, the fork is quickly placed near the ear of the observer, and the time noted which elapses before the sound becomes inaudible. It need not be said that it frequently happens that this

period of inaudibility varies greatly for high and low tones with the same patient. For instance, a patient may hear the low tone as long as the observer, while the high tone is audible to the observer for ten or fifteen seconds after the patient has ceased to hear it.

When the low tones are heard normally, and the ability to hear high tones and whispers is diminished, it is evident that disease of the sound-conducting apparatus may be excluded and an affection of the labyrinth diagnosticated. The writer has found this condition in cases where the evidence pointed to disease of the inner ear, as in deafness after meningitis, after stunning by a violent explosion, and after ringing in the head, both preceding hyperæsthesia of the auditory nerve and a still existing severe vertigo. Such cases strengthen the diagnosis in cases where no history of preceding disease can be obtained. In this class of cases the middle and external ears are usually intact so far as can be determined, but Lucæ has seen numerous cases of this kind where there were such lesions of the m. tympani as scars, thickenings, and concretions, which would ordinarily be considered as the expression of deeper disturbances of the sound-conducting apparatus. He has himself treated patients for chronic catarrh of the middle ear in whom he afterwards found that the ability to hear low tones was normal. It could not be determined positively that these cases were due *solely* to disease of the labyrinth, except by proofs derived from pathological anatomy. Such evidence the writer obtained from the following case, which came to an autopsy six weeks after the clinical examination.

Case.—A woman, eighty-nine years old, had been run over by an omnibus eleven years before, and ever since had been partially deaf. With the right ear she could hear a whisper at the distance of 3 m. On the left side she could hear only when one shouted in her ear. With the left ear she did not hear a C¹ fork at all, but with the right ear she heard it normally. Both external auditory canals were free. The left m. tympani was much retracted and perforated near its border. On introducing a small rubber tube into the left external canal and blowing through it with the mouth, the air escaped into the pharynx with a dry hissing sound. On the right side nothing abnormal was discovered. Unfortunately no examination was made with high musical tones. The autopsy was on the day following her death. The pia was found cedematous, and the brain injected; the ependyma of the fourth ventricle thickened, and the striæ acusticæ absent. Both petrous bones were much injected. The auditory nerves were slender, and of a gray colour. On the right side the external and middle ears were normal. After removing the dura, the upper semicircular canal was partly exposed owing to the absorption of the bone. Advantage was taken of this to test the mobility of the sound-conducting apparatus in a novel manner. After removing the anterior wall of the

external auditory canal, blasts of air were directed against the m. tympani by means of a rubber bulb, and it was observed that the fluid in the labyrinth moved synchronously with the blasts of air. After removing the cochlea it was observed that the membrane closing the fenestra rotunda moved with the fluid of the labyrinth. Nothing abnormal was noticed in the labyrinth itself. Under the microscope the vestibular branch of the auditory nerve appeared normal, while the cochlear branch showed very thin, atrophied fibres, with marked destruction of their borders. In the left ear the external canal was free. Besides the changes observed during life, the m. tympani was leathery, and completely united to the promontory. The tympanic cavity and mastoid cells were completely stuffed with the thickened mucous membrane, so that the ossicles had to be dug out with a knife. The tympanic opening of the Eustachian tube was free. The labyrinth and auditory nerves showed the same appearances in general as on the right side, although here the vestibular branch also was attacked by atrophy. The nerves were examined while fresh.

It is unfortunate that in this case the ability to hear high tones was not investigated, yet it is presumable that it would have been found diminished, as is wont to happen in old age. The point of greatest significance in this case is that with such great diminution of the ability to hear a whisper, and with normal perception of low tones such as existed in the right ear of the patient, there should have been found a normal sound-conducting apparatus, with disease of the labyrinth. It is certain that the group of nerve-fibres among which were those fibres which belong to the tone C¹ were still capable of performing their function. Thus it is seen that with atrophy of the cochlear nerve a whisper may still be heard, though perhaps with diminished distinctness, while when severe disease of the sound-conducting apparatus co-exists, as in the left ear of this patient, only shouting in the ear is audible.

With regard to the frequency of this phenomenon, the author found that out of 117 cases examined 41 per cent. heard the low-tone C remarkably well, while 16 per cent. heard this tone normally. Another practical point to be observed is that the natural method of measuring the degree of deafness, *i.e.* by speech, particularly with a single low sound, is not to be improved upon. The ticking of a watch, which is commonly used as a measure by aurists, is generally of so high a pitch that it does not always show the degree of deafness of the patient for spoken sounds.—*The American Journal of Otology*, July 1880, pp. 219-223.

Part Fifth.

MEDICAL NEWS.

INTERNATIONAL MEDICAL CONGRESS, 1881.—The Executive Committee made their report to the General Committee of this Congress, which recently met at the College of Physicians. The officers of the Congress were proposed and nominated. The sections were agreed upon, and the treasurer, Mr Bowman, announced that large subscriptions had already been received. It was agreed that the time of meeting of the Congress should be from the 3d to the 9th of August 1881. The President of the Council of the British Medical Association stated that the Council of that body had postponed their meeting to the following week. It was also announced that the Congress would meet in rooms granted for the purpose by the University of London, the Royal Society, and the other learned societies meeting in Burlington House, so that the sections will be all practically under the same roof. The following list of officers suggested by the Executive Committee for the consideration of the General Committee at its meeting, July 13, was adopted:—*President of the Congress*: Sir James Paget, Bart., LL.D., D.C.L., F.R.S. *Vice-Presidents of the Congress*: Dr Risdon Bennett, LL.D., F.R.S., Pres. Roy. Coll. Physicians, London; The President Royal College of Surgeons of England; The President Royal College of Surgeons, Ireland; The President King's and Queen's College of Physicians, Ireland; The President Royal College of Surgeons, Edinburgh; The President Royal College of Physicians, Edinburgh; The President Faculty Physicians and Surgeons of Glasgow; The Master of the Society of Apothecaries of London; The Governor of the Apothecaries' Hall of Ireland; Sir Thomas Watson, Bart., M.D., D.C.L., LL.D., F.R.S.; Sir William Jemser, Bart., M.D., K.C.B., D.C.L., F.R.S.; Sir George Burrows, Bart., M.D., D.C.L., F.R.S.; Sir Robert Christison, Bart., M.D., D.C.L., F.R.S.E., Edinburgh; Sir Joseph Hooker, K.C.S.I., M.D., F.R.S., Director of Kew Gardens; Prof. Owen, F.R.C.S., C.B., F.R.S., British Museum; Dr Carpenter, M.D., C.B., F.R.S., London University; Prof. Acland, M.D., D.C.L., LL.D., F.R.S., Oxford; Geo. Busk, Esq., F.R.S.; Luther Holden, Esq.; Dr Hudson, M.R.I.A., Dublin; Prof. Huxley, LL.D., Sec. Royal Society; Thomas Keith, Esq.; Prof. Lister, LL.D., D.C.L., F.R.S.; Robt. McDermott, Esq., F.R.S., M.R.I.A., Dublin; Prof. Geo. Paget, M.D., D.C.L., LL.D., F.R.S., Cambridge; Prof. Allen Thomson, M.D., LL.D., F.R.S.; Prof. Burdon Sanderson, M.D., LL.D., F.R.S.; Prof. Spence, F.R.S.E., Edinburgh; Spencer Wells, Esq., F.R.C.S. *Section I.—ANATOMY—President*: Prof. Flower, F.R.S. *Vice-Presidents*: Prof. Macalister, M.D., Dublin; Prof. Rolleston, M.D., F.R.S., Oxford; Prof. Turner,

F.R.S., Edinburgh. *Secretary*: Prof. Thane. Section II.—**PHYSIOLOGY**—*President*: Prof. Michael Foster, F.R.S., Cambridge. *Vice-Presidents*: Dr Pavy, F.R.S.; Prof. Purser, M.D., Dublin; Prof. Rutherford, M.D., F.R.S., Edinburgh. *Secretaries*: Dr C. S. Roy; Prof. Gerald Yeo. Section III.—**PATHOLOGY and MORBID ANATOMY**—*President*: Dr Samuel Wilkes, F.R.S. *Vice-Presidents*: Dr Bristowe; Jonathan Hutchinson, Esq.; Prof. Sanders, M.D., F.R.S.E., Edinburgh. *Secretaries*: Dr Payne; Marcus Beck, Esq., M.S. Section IV.—**MEDICINE**—*President*: Sir William Gull, Bart., M.D., D.C.L., F.R.S. *Vice-Presidents*: Prof. Gairdner, M.D., Glasgow; Dr Quain, F.R.S.; Dr William Roberts, M.D., F.R.S., Manchester. *Secretaries*: Dr Duckworth; Dr W. M. Ord. Section V.—**SURGERY**—*President*: John Eric Frichsen, Esq., F.R.S. *Vice-Presidents*: Prof. E. H. Bennett, M.B., Dublin; Prof. Humphrey, M.D., F.R.S., Cambridge; W. S. Savory, Esq., F.R.S. *Secretaries*: H. G. Howse, Esq.; Thomas Smith, Esq. Section VI.—**OBSTETRIC MEDICINE and SURGERY**—*President*: Dr M'Lintock, LL.D., Dublin. *Vice-Presidents*: Dr Barnes; Dr Matthews Duncan, LL.D., F.R.S.E.; Dr Priestly. *Secretaries*: Dr Galabin; Dr John Williams. Section VII.—**DISEASES OF CHILDREN**—*President*: Dr West. *Vice-Presidents*: Dr Gee; Timothy Holmes, Esq. *Secretaries*: Dr Donkin; R. W. Parker, Esq. Section VIII.—**MENTAL DISEASES**—*President*: Dr Lockhart Robertson. *Vice-Presidents*: Dr Crichton Browne, F.R.S.E.; Dr Maudsley. *Secretaries*: Dr Gasquet; Dr Savage. Section IX.—**OPHTHALMOLOGY**—*President*: William Bowman, Esq., F.R.S. *Vice-Presidents*: G. Critchett, Esq.; Henry Power, Esq., M.B.; Dr Argyle Robertson, F.R.S.E., Edinburgh. *Secretaries*: Dr W. A. Brailey; E. Nettleship, Esq. Section X.—**DISEASES OF THE EAR**—*President*: William B. Dalby, Esq. *Vice-Presidents*: Dr Cassells, Glasgow; Dr Fitzgerald, Dublin. *Secretaries*: Dr Urban Pritchard; Dr Laidlaw Purves. Section XI.—**DISEASES OF THE SKIN**—*President*: Erasmus Wilson, Esq., F.R.S. *Vice-Presidents*: Dr Cheadle; Dr R. Liveing. *Secretaries*: Dr Cavafy; Dr Thin. Section XII.—**DISEASES OF THE TEETH**—*President*: Edwin Saunders, Esq. *Vice-Presidents*: John Tomes, Esq., F.R.S.; Charles Spencer Bate, Esq., F.R.S. *Secretary*: C. Tomes, Esq., F.R.S. Section XIII.—**STATE MEDICINE**—*President*: John Simon, Esq., C.B., F.R.S. *Vice-Presidents*: Dr George Buchanan; Prof. de Chaumont, F.R.S.; Dr Douglas MacLagan, F.R.S.E., Edinburgh; J. Netten Radcliffe, Esq. *Secretaries*: Prof. Corfield, M.D.; Dr Thorne Thorne. Section XIV.—**MILITARY SURGERY and MEDICINE**—*President*: Surgeon-General Prof. Longmore, C.B. *Vice-Presidents*: Sir Wm. Muir, M.D., K.C.B., Director-General Army Med. Dep.; Surgeon-General Sir Joseph Fayrer, M.D., K.C.S.I., LL.D., F.R.S.E., India Office; Dr J. W. Reid, Director-General Med. Dep. of Navy. *Secretaries*: Surgeon A. B. R. Myers, Coldstream Guards; Surgeon-Major Sandford Moore, Aldershot, R.N.;

Section XV.—**MATERIA MEDICA and PHARMACOLOGY**—*President*: Prof. T. R. Fraser, M.D., F.R.S., Edinburgh. *Vice-Presidents*: Dr Lauder Brunton, F.R.S.; Prof. Sydney Ringer. *Secretaries*: Dr E. B. Baxter; Dr F. T. Roberts. **MUSEUM**—*Committee*: Jonathan Hutchinson, Esq. (*Chairman*); Waren Tay, Esq.; C. Stewart, Esq.; Dr V. Poore; Dr F. Macnamara; J. F. Goodhart (*Secretary*).

THE HORRORS OF VIVISECTION.—The total number of vivisections in England and Wales during the year 1879 was 270. Of these the number of experiments "in which," to use the language of the report, "there is reason to believe that some material suffering was caused" was about twenty-five. Of these twenty-five, fifteen were cases in which disease followed the inoculation of infectious matter, but in which no painful operation was performed; and ten were experiments upon as many frogs, in which an incision of the skin was required for the introduction of a medicinal substance. To endeavour to abate the barbarities indicated above, a meeting of the International Association for the Total Suppression of Vivisection took place a short time ago. Earls, and knights, and marquises, and like rubbish, who spend their summers running foxes out of breath and then shooting (*sic*) them, met and passed various resolutions for the furtherance of their cause. It is beautiful to think how much tenderness the sufferings of ten frogs can awaken.—*New York Medical Recorder*, August 7.

COURSE OF STUDY AND EXAMINATION FOR DEGREE IN THE PHILADELPHIA ELECTROPATHIC INSTITUTION.—Under the guise of a countryman, the reporter of the *Record*, a penny daily paper, applied for instruction and attended the "full course" of the institution, comprising seven lectures, each about an hour in length, and each reiterating what had previously been said on the "Theory of Electricity." At the end of a week, the "professor" said he was going out of town, and that the course of lectures would now be closed. The student was provided with a work upon medical electricity and a copy of Cutter's Anatomy. One week's reading, with a lecture on the "winker" muscles of the eye, concluded the course, and having prepared a thesis, the student was examined, the questions being as follows: "How would you diagnose?" "How would you treat a headache?" "How would you treat a case of eruption?" "How would you treat neuralgia?" "What would you say if some one came in your office and said, 'Electricity is nothing'?" The reporter's answers to these questions were so satisfactory that the professor assured him with effusion that he "had grasped the philosophy and treatment better than any student they had had," and on payment of one hundred and thirty dollars the "right hand of fellowship" was proffered the newly-fledged graduate, and an elaborate diploma (given in the *Record* in fac simile) was presented him, declaring him, in sonorous Latin phraseology, "In Electro-Therapeuticis Magistrem."—*Chicago Med. Jour.*, July 1880.

LIST of CANDIDATES who were successful for appointments as

Surgeons in Her Majesty's British Medical Service at the Competitive Examination in London on 9th August 1880.

No.	Name.	Marks.	No.	Name.	Marks.
1.	Crick, S. A.	2510	36.	Swabey, L. W.	1610
2.	Dodd, J. R.	2240	37.	Haselden, R.	1605
3.	Struthers, A. J.	2230	38.	Ricketts-Mosse, R. E.	1600
4.	Twiss, G. E.	2230	39.	Lyons, W. J. B.	1590
5.	Adams, R. F.	2225	40.	Rowney, W.	1590
6.	Mosse, C. G. D.	2135	41.	Lucas, T. J. R.	1565
7.	Cottell, A. B.	2075	42.	Addison, C. J.	1560
8.	Archer, T.	2035	43.	Kay, A. G.	1560
9.	Hamilton, S. G.	2035	44.	Pope, W. W.	1560
10.	Moberly, H. J. R.	1990	45.	Porter, R.	1560
11.	Hart, A. P.	1955	46.	Laffan, R. C. K.	1555
12.	Barnes, H. J.	1930	47.	Mitchell, C. A. P.	1555
13.	Sawyer, R. W. S.	1930	48.	Coates, G. J.	1550
14.	Bedford, W. G. A.	1920	49.	Cook, G. W. H.	1545
15.	Jepping, R.	1910	50.	Tuckey, T. B. A.	1535
16.	Robinson, S. C. B.	1880	51.	Harris, F. A.	1515
17.	Parker, H. S.	1840	52.	Lewis, C. B.	1500
18.	Fogarty, T. F. W.	1825	53.	Parke, T. H.	1450
19.	Ford, R. W.	1825	54.	Daly, F. A. B.	1445
20.	Coutts, G. J.	1820	55.	Rose, A. S.	1445
21.	Sharpe, A.	1800	56.	Porter, D. L.	1430
22.	Young, C. L.	1800	57.	Battersby, J.	1425
23.	Reid, C.	1780	58.	Maconachie, J.	1415
24.	Baker, W. J.	1770	59.	Morgan, A. H.	1405
25.	Sloggett, A. T.	1755	60.	Dixon, C. H.	1400
26.	Elmes, R. R. K.	1715	61.	Moynihan, T.	1375
27.	Allport, H. K.	1700	62.	O'Keeffe, M. W.	1370
28.	Butt, E.	1680	63.	O'Donnell, T. J.	1360
29.	Townsend, S.	1680	64.	Osborne, J.	1355
30.	Woodhouse, T. R. P.	1675	65.	Wolrige, H. E. R.	1355
31.	Gibson, J.	1650	66.	Hetherington, R. P.	1315
32.	Rhodes, J. H. A.	1625	67.	Johnstone, R. C.	1295
33.	Hickman, A.	1620	68.	Dixon, T. A.	1270
34.	Nugent, T. C.	1620	69.	Poole, W. C. T.	1250
35.	Lewis, G. S.	1610			

LIST of CANDIDATES for commissions as Surgeons in Her Majesty's Indian Medical Service who were successful at both the London and Netley Examinations, August 1880.

No.	Name.	Marks.	No.	Name.	Marks.
**†1.	Simpson, J.	5635	13.	Maitland, C. B.	4068
*2.	Lukis, C. P.	5483	14.	Dymott, D. F.	4018
3.	Whitwell, R. R. H.	5465	15.	Cama, R. H.	3998
4.	Waddell, L. A.	5233	16.	Browning, W. B.	3980
5.	Dimmock, H. P.	4530	17.	Henderson, C.	3896
6.	Shewan, G.	4445	18.	Divecha, F. R.	3892
7.	Spencer, D. B.	4396	19.	Adams, A. P.	3864
8.	Clarke, J.	4391	20.	Thompson, C. M.	3783
9.	Vaid, C. C.	4383	21.	Rundle, C. S.	3667
10.	Pank, P. D.	4303	22.	Evans, J. W.	3612
11.	Mulroney, T. R.	4115	23.	Leonard, J.	3604
12.	Macdonald, T. R.	4094			

C. F. Willis (who became ill last Session) . . . 4166

† Gained the Herbert Prize.

** Gained the Martin Memorial Medal.

• Gained the Parkes Memorial Bronze Medal.

PUBLICATIONS RECEIVED.

- RICHARD BARWELL, F.R.C.S.,—On Aneurism. Macmillan & Co., Lond., 1880.
 S. F. A. CAULFIELD,—Sick Nursing at Home. Bazaar Office, Lond., 1880.
 CHARLES R. DYSDALE, M.D.,—Nature and Treatment of Syphilis. Baillière, Tindall, & Cox, Lond., 1880.
 Eleventh Report of the State Board of Health of Massachusetts.
 First Annual Report of the State Board of Health, Lunacy, etc., of Massachusetts.
 Transactions of the American Dermatological Association. 1880.
 Twenty-second Annual Report of the General Board of Commissioners in Lunacy for Scotland. 1880.

PERIODICALS RECEIVED.

- Alienist and Neurologist,—April.
 American Journal of Obstetrics,—April-July.
 American Journal of the Medical Sciences,—April-July.
 American Practitioner,—April-Aug.
 Analyst,—April-Aug.
 Annales d'Oculistique,—March and June.
 Annals of the Brooklyn Anatomical and Surgical Society,—March-June.
 Archives de Tocologie,—April-Aug.
 Archives Générales de Médecine,—April-Aug.
 Archives of Comparative Medicine and Surgery,—Jan.
 Archives of Dermatology,—April and July.
 Archives of Laryngology,—March.
 Archives of Medicine,—April-Aug.
 Australian Medical Journal,—Jan.-June.
 Berliner Klin. Wochenschrift,—March 29-Aug. 23.
 Birmingham Medical Review,—April and July.
 Births, Deaths, and Marriages, Monthly Return of,—March-July. Quarterly Return,—March and June.
 Boston Medical and Surgical Journal,—March 11.-Aug. 12.
 Brain,—April and July.
 British Medical Journal,—April 3-Aug. 21.
 Brook's Popular Botany,—No 1.
 Bulletin Général de Thérapeutique,—March-Aug. 15.
 Calcutta Medical News,—Feb.
 Centralblatt für Chirurgie,—March-Aug. 21.
 Centralblatt für Gynäkologie,—Jan. 3-Aug. 14.
 Chicago Journal,—April-Aug.
 Dental Surgery,—May-Aug.
 Detroit Lancet,—April-Aug.
 Deutsche Medicinal Zeitung,—April.
 Dublin Journal of Medical Science,—April-Aug.
 El Mercado,—April and May.
 France Médicale,—March 27-Aug. 21.
 Gazette des Hôpitaux,—March 23-Aug. 24.
 Gazette Hebdomadaire de Médecine,—March 25.
 Gazette Médicale de Paris,—March 27-Aug. 21.
 Gazette Médicale de Strasbourg,—April-Aug.
 Gazzetta degli Ospitali,—Feb.
 Giornale Internazionale delle Scienze Mediche,—Fasc. 1-3.
 Glasgow Medical Journal,—April-Aug.
 Independencia Medica,—Nos. 1-8.
 Independent Practitioner,—March and June.
 Journal de Thérapeutique,—March 25-Aug. 25.
 Journal of Anatomy and Physiology,—April and July.
 Journal of Mental Science,—April and July.
 Journal of Nervous and Mental Disease,—April and July.
 Journal of Psychological Medicine,—Vol. 6, Part 1.
 Kings, Proceedings of Medical Society of County of,—April-Aug.
 Klinische Monatsblätter für Augenheilkunde,—April-Aug.
 L'Année Médicale,—Jan.
 London Medical Record,—April-Aug.
 Louisville Medical Herald,—March-Aug.
 Medical News and Abstract,—Aug.
 Medical Press and Circular,—March-Aug. 25.
 Medical Times and Gazette,—March 27-Aug. 21.
 Medical Tribune,—March-July.
 New Remedies,—March-Aug.
 New York Medical Journal,—April-Aug.
 New York Medical Record,—Mar. 13.-Aug. 14.
 Nordiskt Medicinskt Arkiv,—Band 12, Nos. 1-6.
 Obstetrical Journal,—April-Aug.
 Philadelphia Medical and Surgical Reporter,—March 13-Aug. 7.
 Philadelphia Medical Times,—March 13-July 31.
 Practitioner,—April-Aug.
 Progrès Médical,—March 27-Aug. 21.
 Recueil d'Ophthalmologie,—April-Aug.
 Revue Médicale,—March 27-Aug. 21.
 Sanitary Record,—April-Aug.
 St Louis Courier of Medicine,—Mar.-July.
 St Louis Medical and Surgical Journal,—April 5.
 Therapeutic Gazette,—March-July.
 Virchow's Archiv,—March-July.
 Voice,—July.
 Washington National Board of Health Bulletin,—March 6-Aug. 7.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On Axis-Traction Forceps.* By ALEXANDER RUSSELL SIMPSON, M.D., F.R.S.E., Professor of Medicine and Midwifery and the Diseases of Women and Children in the University of Edinburgh.

(Communicated to the Obstetrical Society of Edinburgh, 21st July 1880.)

(Continued from page 251.)

III. CONSTRUCTION OF FORCEPS.

IN choosing an instrument which will fulfil all the indications, because possessing all the powers, required in an effective pair of forceps in the various emergencies of practice, the obstetrician should be careful to select a double curved forceps that can grasp the head either at the floor of the pelvis, in the brim, or above the brim. It is important to accustom the mind and hands to the relation and working of an instrument that will be available for every case. The head, even when grasped at the floor of the pelvis, is best carried along the curve of the canal with a curved instrument. With such an instrument the Fellows of this Society are all very familiar; for since Sir James Simpson in 1848 laid his forceps before it, most of us have had abundant opportunity of testing their efficacy, and have come to the conclusion, that what ought in any case to be effected by means of forceps can be effected by these. They are essentially a pair of long forceps¹ intended and adapted for application either above, at, or below the brim, and I find it difficult to comprehend how Dr Barnes can have fallen into the error of misrepresenting them as if they were only to be used in low forceps operations.² Some of the best points in their construc-

¹ *Selected Obstetrical and Gynecological Works*, by Sir J. Simpson, vol. i. p. 37, edited by Dr Watt Black.

² We may as well take the opportunity of demurring to Dr Barnes' dogma enunciated on the same occasion in the London Obstetrical Society (*Trans. L. O. S.* for 1879, p. 243, that obstetric experience is a matter of population, in the sense, at least, that only in large centres of population are we to look for

tion have been copied in others of more recent date. Whilst, like some other British forceps previously in use, they are long enough to allow of application to the head above the pelvic brim, they present the advantages, *first*, of having the shanks thrown widely enough apart to allow of the introduction of a finger between them close to the lock during traction; *second*, of having knees or projections above the Smellie lock, "of such size as to prevent the blades readily unlocking in the intervals between the pains, thus giving it the fixed character of the locks of Levret and Brunninghausen without their complexity." At the same time, *thirdly*, "the joints are made so loose as to allow of their lateral motion and overlapping to a very considerable degree, thus facilitating their introduction and application." *Lastly*, the handles, which are grooved and marked on the anterior sides, are provided with transverse rests or hooks borrowed from the handles of the German forceps (Fig. 1.) For it may be interesting here to note that the

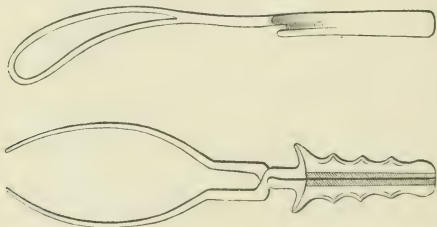


FIG. 1.—Sir J. Y. Simpson's forceps shown locked, and left blade shown singly from outside of blade.

traction power used to be attained in French, German, and British instruments at different parts of the handles. The handles of typical French forceps end in hooks curving outwards (as in Fig. 2), and through these proximal hooks traction is effected. German obstet-

advances in obstetrics. Palfyn's Ghent, Naegel's Heidelberg, Rigby's Norwich, Solayres' Montpellier, and many another comparatively small town, European and American, protest against the dictum. Professor Stephenson of Aberdeen was in the right in claiming that Scotland had given the British Empire the keynote to the proper use of the long forceps. And if Dr Barnes be correct in saying, with regard to England and Ireland, "that it is in the great centres of population—London, Manchester, Birmingham, Dublin . . . that the longer forceps have come into use," we can only say that the practitioners in smaller centres must have been miserably taught; while for two generations, at least, the practitioners in Scottish villages have made due use of the long forceps. There is a kind of "experience" that is very hindesome to progress. It might be well for Dr Barnes to consider what advances in obstetrics and gynecology during the last half century have come respectively from London, Dublin, and Edinburgh. The land of the mountain and the flood has its drawbacks, but a Scotch mist does not follow its victims into their homes and halls like a London fog.

ricians placed their traction hooks nearer, sometimes close to, the lock. Until Simpson borrowed the Naegele hooks, British obstetricians obtained traction power by grasping the handle in all its length, sometimes supplementing it by passing a finger between the shanks of the blades.

Let us suppose any of them applied to the head at the brim of the pelvis, and let us ask in what direction the traction is applied, and what will be its effect. Let us suppose, *e.g.*, the traction applied through hooks at the extremities of the handles, as in the French instrument. If we study this in such a diagram as is shown in Fig. 2, it is seen that the central point of the head C ought to

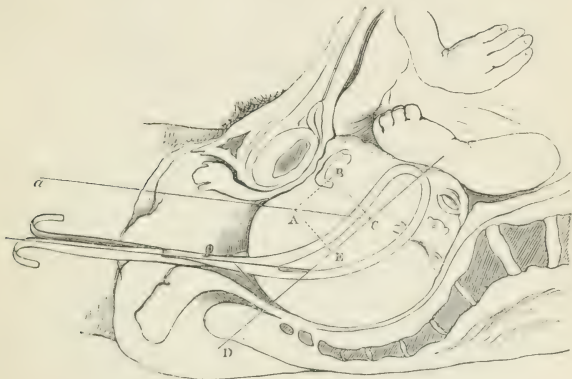


FIG. 2.—Levret forceps applied to a fetal head in the pelvis. The parallelogram of forces, A B C E, illustrates the amount of force lost (= difference between C A and C E), and the amount misdirected (= C B), when traction is made with straight handles.

travel downwards in the direction of the line C D, along which it would be driven by the natural powers. But traction applied simply through the hooks *a* will act in the direction of the line *a* A C, running parallel to the handles. Only a part of the power thus applied will be available for dragging the head in the axis of the brim. If we resolve the force into its components, we find that these are constituted by the lines C E and C B. Of these, the useful component C E in a case where a force A C of the weight of 50 lbs. meets the line of descent C D at an angle of 40° would be only $38\frac{1}{2}$ lbs. And it is important to observe that whilst a force of only $38\frac{1}{2}$ lbs. is acting in a useful direction, a force of 32 lbs. is being exerted in a vicious direction, crushing the head against the symphysis in the direction and to the extent indicated by the line C B. It is important to note that as the actual line of traction diverges from the axial one the amount of detrimental

pressure very rapidly increases. If the pull be directly in the axis, the force would be all available and there would be no detrimental pressure on the walls of the passage; but as it diverges from that line we find the available force diminish and the detrimental pressure increase according to the proportion shown in the following table, for the calculations of which I am indebted to Mr Alfred Daniell, B.Sc., Lecturer on Medical Physics:—

Angle of traction made with axis.	Available force.	Detrimental pressure.
	lbs.	lbs.
0°	50	0
10°	49·24	8·68
20°	46·98	17·10
30°	43·30	25·00
40°	38·30	32·13
50°	32·13	38·30

The first who clearly demonstrated these disadvantages of the double-curved forceps, and made suggestions for overcoming them, was Professor Hubert of Louvain, from whose lectures,¹ as published by his son, I have partly borrowed in constructing these diagrams. In 1860 he proposed to bend the free extremities of the handles back at right angles, in order to correct the line of traction. In 1866 he fixed a bar to the handles, close to the lock. (See Fig. 3.)

In 1868² Dr Aveling of London showed to the Obstetrical Society there a pair of forceps, the handles of which were curved backward; and in 1878,³ in a very able and interesting communication, he discussed the curves of midwifery forceps, their origin and uses, and demonstrated the advantages of an instrument having not only pelvic but perineal and handle curves. In 1878⁴ Dr W. L. Reid of Glasgow showed to the Medico-Chirurgical Society of that city an ingenious pair of forceps which differed from the usual forceps in various respects, and among others in having a compensatory curve on the handles to allow of direct traction in the chord of the blades of the pelvic curve. In 1861⁵ M. Chassagny of Lyons, in constructing an apparatus by which the traction could be kept up continuously by a screw, passed tapes through perforations in the posterior rim of the fenestræ of the forceps blades.

¹ *Cours d'Accouchemens*, Louvain, 1878. I am not overlooking the forceps proposed by Herman of Berne in 1844, the originals of which I have had the opportunity of seeing through the kindness of Prof. P. Muller. But though they have some features in common with Tarnier's forceps, the principle of their action is not the same.

² *Transactions of London Obstetrical Society*, vol. x.

³ *Ibidem*, vol. xx.

⁴ *Glasgow Medical Journal*, June 1878.

⁵ *Bulletins de l'Académie de Médecine*, xxvi. 414.

By far the most valuable suggestion for obtaining the full benefit of forceps with a pelvic curve is that made in 1877 by M. Tarnier,

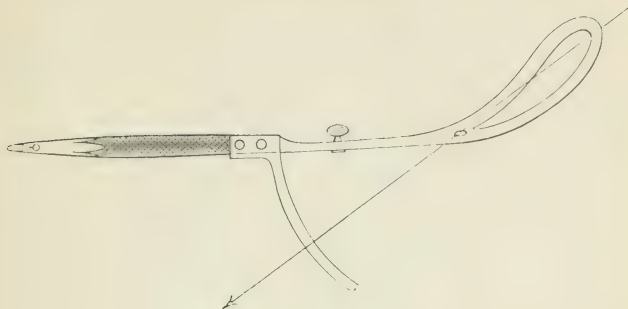


FIG. 3.—Hubert's forceps, with axis-traction bar fixed to the handles.

the distinguished accoucheur of the Paris Maternity, which is ably explained and clearly illustrated in his memoir.¹ (See Fig 4.) The

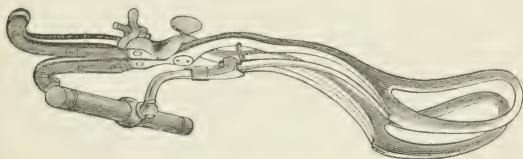


FIG. 4.—Tarnier's forceps.

Fellows of this Society will remember that the Tarnier forceps were demonstrated to us by Dr R. Bell² of Glasgow, and that whilst they present peculiarities in the form of the blades and in the curve of the shanks, their most important and novel features consist in the addition of metallic traction-rods to the posterior edge of the blades, and of a fixation-screw in front of the handles, immediately below the lock. During the application of the blades the traction-rods are each fixed by a catch to the back of their respective shanks, so that the blades are introduced in the same way as an ordinary pair of forceps. After the blades are locked the rods are freed from the catch, and their free extremities fitted and fixed by a slide into a single curved stem, which has a transverse bar

¹ *Description de deux nouveaux forceps.* Paris.
Transactions of Edinburgh Obstetrical Society, v., 1879.

attached to its other extremity. This transverse bar, which is freely movable in every direction, constitutes the traction-handle, and by drawing on this alone through the medium of its connexion with the blades, the advance of the head is effected. It is in consequence of the direct connexion of the traction-rods with the fenestral rim that the addition of the fixation-screw is necessitated. In ordinary forceps, when traction is made by the handles, the handles are kept in contact, and the blades are kept in position by the very grasp that is needful for traction. But in making traction with the curved rods the application-handles need never be touched. It might be quite possible to keep those handles compressed in one hand, while traction was made on the traction-handle with the other. But in practice it is found much easier to secure the blades by a turn of the fixation-screw, so as to leave the second hand free to assist in the traction, or to guard the perineum, or to watch the progress of the head through the pelvic canal.

I confess that when I first read M. Tarnier's monograph I was more impressed with what I thought were the dangers of this fixation-screw, and the seemingly complicated character of the instrument, than with the value of the principle that underlay their construction. Even after Dr Bell's emphatic testimony to the facility of their application, I still felt that it was too cumbersome and costly¹ to be likely ever to get into general favour. But the more I considered the objects sought to be attained by them, especially after I had experienced their value in one or two difficult cases as well as on the phantom, the more I became convinced that all forceps extractions ought to be effected with some such instrument.

The Fellows of the Society will easily believe that I entertained a wholesome dislike to any attempt at tampering with our own well and widely approved forceps. Two of Sir James Simpson's most distinguished pupils have proposed modifications of it, which both only result in depriving it of valuable power. Dr Matthews Duncan removed the traction-hooks, so that the operator is compelled in every case to exercise a compression which the hooks enabled him sometimes to avoid. Dr Andrew Inglis cut off the handles till only the hooks were left, so that the operator had no power of producing any compressing action whatever. I have always felt that against any mutilating of the Edinburgh forceps we had a powerful mutual protest in the respectively modified instruments of the late obstetric professor of Aberdeen and the present obstetric physician of St Bartholomew's. But it became more and more clear to me that if we could adapt traction-rods to the well-tried blades in some way which would not materially increase the difficulty of their application, we should add immensely to their value as powerful and safe extractors. After a

¹ Tarnier's forceps cost £3, 10s. Mr Gardner makes the Simpson forceps, with axis traction rods of Fig. 5, for £2, and applies the traction apparatus to an old pair of forceps for £1.

series of experiments I have succeeded in getting a pair of forceps made which I do not pretend to look on as finality, but which I am prepared to commend to my fellow-practitioners as having all the advantages of their own familiar implement with the superadded benefit of traction-rods articulated to the blades. (See Fig. 5.)

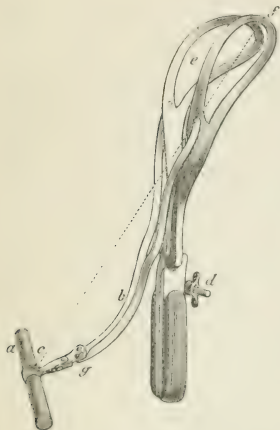


FIG. 5.—Simpson's forceps, with axis-traction rods attached. *a*, Traction-handle; *b*, Traction-rod; *c*, Fixation-screw; *d*, Left fenestra; *e*, Locking-plate of the traction-rods; *f*, Axial line of traction.

What I ask you to notice first is, that this forceps is simply in its basis the ordinary Simpson forceps without the knees or traction-hooks on the handles. The handles have had their hooks and ridges smoothed off them, because they are to be used solely for applying and fixing the blades, and are to be left untouched whilst traction is being effected. They are to be known as the "Application handles," in contradistinction to the new "Traction-handle." The Fixation-screw is much smaller than that on the Tarnier forceps, because it can never be strongly enough impressed on the mind that the screw is not to be used in the slightest degree as a means of approximating the blades or compressing the head. When any degree of pressure is applied to the head in the grasp of the blades, the pressure is effected

by the sentient hand of the operator, and he only fixes the screw when he feels that he has approximated the handles to a point that will secure a degree of compression at once *safe* and *sufficient*. If the compression be too great, the child's head will suffer; if it be too slight, the forceps will slip.

I have not found it necessary to make any change in the curves of the instrument; and in this connexion I may be allowed to express the pleasure it gave me to see, when I visited Paris three months ago, that M. Tarnier had found that the perineal curve of his forceps which he had borrowed from the instrument of Moralès was not necessary, and had begun to use one of the older varieties of the Levret forceps with his traction-rods adapted to the blades.

I am bold to fancy that the traction-rods attached to our forceps are an improvement on those of Tarnier. I have stated that his traction-rods are fitted into a single stem which, with the traction-bar, is detached from the rest of the instrument when it is not in use. This renders the traction-handle easy to be mislaid; and on one occasion I found that I had taken the forceps with me and left the

traction part behind. Happily it was only to a museum experiment, and not to an actual case. I have preferred to have the entire traction apparatus permanently attached to the blades. (See Fig 6.)

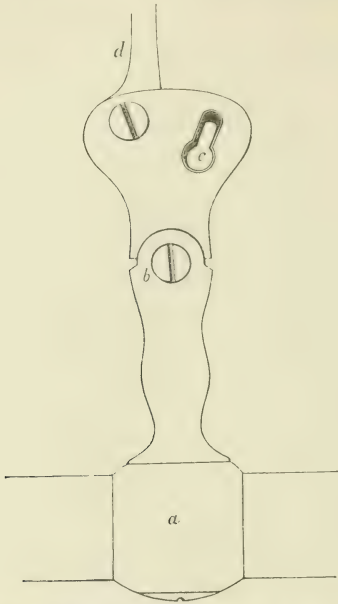


FIG. 6.—Locking-plate and joints of the traction-handle (full size). *a*, Joint for rotation of traction-bar; *b*, Joint for lateral movement; *c*, Opening and slot for locking of right traction-rod; *d*, Left traction-rod permanently jointed to locking-plate.

The traction-bar or handle is jointed (*a*) to a plate which is permanently jointed in its turn to the left traction-rod (*d*), and which has an opening with a slot (*c*) wherein the free extremity of the right rod is readily locked. The left rod can be fixed with a catch to the shank of its own blade, so that the introduction of it is effected in the same way as the blade of the ordinary forceps. The right rod swings free; and it is important to observe that this rod must be pushed forward past its shank during the introduction of the second blade. It is clear that if it were allowed to hang behind the shank it would interfere with the application and locking of the instrument. When the blades have been applied and locked, the left rod is freed from its catch, and the right rod is pushed back and fixed in the locking plate before adapting the fixation-screw.

My description of the instrument would be incomplete if I

did not call attention to another small peculiarity in it. Students have sometimes great difficulty in learning how to recognise the one blade from the other; and I have known a practitioner who had not occasion to make frequent use of forceps puzzled to remember which blade was right and which was left, and which ought to be first introduced. I thought at first that it would be a sure guide in the new forceps to remember that the left blade had the fixed rod and traction handle attached to it; but I find the only way of preventing the possibility of error is to make the instrument-maker stamp the words, "LEFT—LOWER—FIRST" on the handle of the left or lower blade.

The advantages claimed for such axis-traction forceps as I have described are as follows:—

1. All the force expended by the operator is useful. He expends no energy in compressing or keeping the handles together while he pulls, and none of the pulling power is lost.

2. There is no unnecessary and injurious pressure produced on the maternal structures. The head is made to advance under the pull of this artificial *vis a fronte* in the very same direction as it would move under the impulse of the natural *vis a tergo*.

3. The head not being dragged by the forceps against the symphysis pubis, it is not so likely to elude their grasp.

4. The transverse traction-handle gives a solid grasp and purchase for pulling by, and, in consequence of its power of moving in all directions, may be made to run parallel to the axis of the instrument at the close of the labour. It can be used in repressing the too rapid advance of the head where it is advisable to save the perineum from the risk of too rapid expulsion of the head.

5. The compression of the head in one direction, and the compensatory elongation in another, are not increased during tractions made through traction-rods, as they do when traction is made through the ordinary handles. The compression and moulding is altogether a closer copy of the natural configuration than is produced by the old forceps.

6. The rotation of the head is not resisted in any degree, and in the rare cases where it requires to be favoured or effected, the rectification of the position can be brought about by one hand grasping the application handles, while the other makes traction through the rods.

7. The direction of the application handles furnishes a constant guide to the direction in which traction can be made with most effect. This is one of the most important advantages of the adaptation of jointed traction-rods to the forceps blades, and is of itself, to my thinking, enough to make it supersede the use of all the instruments that have perineal and handle-curves. To avail ourselves of it, it is simply necessary to keep the traction-rods constantly parallel to the shanks of the blades; and the proper line of traction

is thus kept up whether the head be passing through brim, cavity, outlet, or vulva. (See Fig. 7.) To this list of advantages, which I have borrowed from Tarnier, I would add—

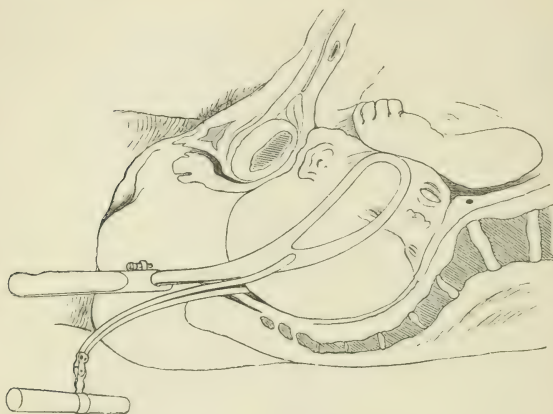


FIG. 7.—Axis-traction forceps applied to the head of the fœtus, placed as in Plate C of Braune's well-known Atlas.

8. The transverse handle enables us to keep up a sustained and continuous pull, which causes the traction to resemble that which Chassagny effected by a screwing apparatus, and the benefits of which have been illustrated by Poulet of Lyons in his admirable toctographical charts.

And 9, there is no impairment of the muscular sense any more than of the muscular power. The operator is therefore better able to judge of the amount of force expended, and to recognise when the distension of the perineum, *e.g.*, is becoming dangerous.

I have not ventured to advocate the value of axis-traction forceps on theoretical grounds alone, without being able to adduce experience gained from the employment of them in a series of nearly twenty cases. In sixteen cases I have used the Simpson forceps with axis-traction handle either personally or by the hands of my assistants, Dr Hart and Dr Barbour. The cases illustrated a wide variety as regards the indication for their use, but they all illustrated the value of the method of extraction. Eleven were primiparæ; five were multiparæ. In some the indication was found in rigidity of the soft canals. In two there was a pelvis justo minor. One of these presented this special interest, that at her first labour her medical attendant had turned the child, but

only succeeded at last in effecting its delivery by perforation and crushing of the after-coming head. In some there was failure in the powers; one of these patients, a primipara, having disease of the mitral valve. In three we had to deal with occipito posterior positions of the head, in all of which the rotation occurred regularly under the steady effective traction. In two the child's head was large, one of them from commencing hydrocephalus. In this last case the head was already at the floor of the pelvis, and had lodged there for three hours when I was called to the case. The mother of this infant, which was born alive and lives still with gradually widening sutures, is the only case of maternal death, and the fatal issue from septicæmia was no way connected with the forceps application. The only death among the infants was due to the cord having been coiled several times round the neck, and the upper coil having been caught in the grasp of the forceps-tip. It was the first time I had seen a forceps case fatal to the infant from this cause, though I had been accustomed in my class lectures to enumerate it as among the sources of danger in their use. I ought to add that in some of the earliest cases the infants had a partial paresis from pressure of the facial nerve in front of the ear. This was found to be due to a fault in the construction of the blades of the instrument employed; for whilst the measurement between the anterior rims at three inches from the point was the normal three inches, the distance between the posterior fenestral rims was only two inches and seven-eighths.

IV. RULES FOR THE USE OF FORCEPS.

I proceed to formulate rules for the employment of forceps, adapted from the plan of procedure of my predecessor.

A. *Preliminary Rules.*

1. Be perfectly assured of their necessity.
2. Tell the relatives always—the patient generally.
3. Be cautious in your prognosis regarding the infant.
4. Always empty the bladder and rectum.
5. Place the patient on her left side, her body across the bed, with nates at edge of it. (Sometimes it becomes desirable to turn the patient on her back during the extraction.)
6. Warm and grease the instrument, and if necessary lubricate the maternal passages.
7. Anaesthetize the patient.
8. Assure yourself of the precise position and relations of the head, introducing the hand as far as is necessary.

B. *Rules Regarding Introduction of Forceps.*

1. Insinuate, do not force on the instrument, and withdraw it partially when any great resistance offers.

2. Keep its point always in contact with foetal head.
3. Introduce each blade so that its concavity adapts itself to the convexity of the foetal head.
4. Enter and apply each in the proper axis of the pelvis.
5. Introduce the instrument during the intervals between the pains, and always suspend the attempt during the continuance of the pains.
6. Introduce first the left blade, which has traction-rod and handle attached to it, and is stamped, "Left—Lower—First."
7. Hold it in the left hand, and use the fingers of the right as a guide. (The left blade may be held in the right hand; but, as a general rule, I think the memorable aphorism of Pajot is correct: *branche gauche, tenue de la main gauche, et introduite à gauche; tout doit être gauche, excepté l'accoucheur.*)
8. When it is fully introduced keep it *in situ* with thumb and two last fingers of left hand, and use again the first two fingers as guide.
9. Introduce the right blade *with the traction-rod swung forward*, pointing it at first toward the hollow of the sacrum.
10. Carry it round the head till it comes into complete antagonism with the left.
11. Slacken the left rod, swing back the right one, and adapt it to the traction-plate.
12. Adapt, but do not tighten the fixation-screw.

C. Rules for Working the Forceps.

1. Grasp application handles, and fix screw at the point where safe and sufficient compression is secured.
2. Make traction with traction-handle during pains; or, if no pains are present, at intervals.
3. Keep the traction-rods parallel with the shanks. (This insures progress of the head in the proper axis of the pelvis.)
4. After each traction slacken, but do not unship, the screw, and examine the progress of the head.
5. Where rotation has to be aided effect rectification with the application handles.
6. Support the perineum carefully with the left hand.
7. Make the head distend, and pass over it very slowly; allowing the uterus itself to complete as often as possible the expulsion of the head, and always that of the body.
8. Immediately after the birth of the head slacken the screw, free the right rod, and remove the right and left blades successively.

ARTICLE II.—*Report of and Observations upon two Cases of Puerperal Septicæmia.* By ANGUS MACDONALD, M.D., Lecturer on Midwifery and the Diseases of Women and Children, Medical School, Edinburgh; Physician and Clinical Lecturer on Diseases of Women, Royal Infirmary, etc., etc.

(Continued from page 214.)

BUT to return to the cases before us. The cases above recorded presented no very marked single characteristic of septicæmia that would strike one at once, except the continuously high temperatures. Had we been able to account for this on any other satisfactory ground, we should have scarcely felt warranted in including the former of the two in this category.

In both cases the fever poison, taking, as I assume, the blood-current as its highway into the system, attacked particularly the respiratory organs, as in the lungs it first met with a field on which to act as an irritant upon the bloodvessels. I assume that in both cases the quantity of poison admitted was comparatively small, and that it got rapidly increased within the organism, but did not fix upon the tissues in the first case until the capillary system of the lungs presented it with a favourable *point d'appui*. In the second case there was a local lesion as well. But the irritating materials evidently in this case also selected the veins, and not the lymphatics, as its course, and therefore we had a complete absence of peritoneal involvement in both cases.

In regard to the first case, the complete absence of pelvic and even of abdominal symptoms rendered it impossible during the course of the illness to decide with certainty whether we had to deal with puerperal septicæmia or with acute tuberculosis. Indeed, the matter could only be set at rest after microscopical examination of the lungs. I might be permitted in this case to observe that I firmly believe the ultimate result of the two cases depended more upon the mental and physical condition of the patients than upon anything else, and that the records impress upon us, among other things, the importance of always taking these points into account in our efforts to establish a prognosis.

The first patient was of a feeble constitution, was nervous, and sadly depressed on account of the mournful circumstances in which she had placed herself. The second patient possessed a vigorous frame, and was only partially if at all depressed by her circumstances. Accordingly the former, after a severe struggle, succumbed to the violence of the same disease from which the latter was ultimately able to come out victorious.

No doubt, however, the great loss of blood which ushered in the acute symptoms in the first case had an injurious influence upon the course of the illness, as is seen in the record of similar cases by McClintock and various authorities. It appears to me that the

extraordinary dilatation of the uterus upon the ninth day after delivery, and the severe secondary hæmorrhage which accompanied it, are also facts worthy of attention. It will be noticed that whereas all appeared to be going on well till that period, on the evening of the ninth day there was severe uterine hæmorrhage, and that Dr Rendall, the hospital resident, other measures failing, passed his whole hand into the uterus, which reached as high as the umbilicus, and cleared out from its cavity clots and what appeared to be either a small firm clot or a portion of placenta.

This state of matters contrasts very markedly with what was found in the case of Janet Montgomery. In her case the contractility of the uterus was so well pronounced that even when the patient was deeply anæsthetized I found it difficult, with my whole hand in the vagina, to insert two or three fingers into the uterine cavity and peel off and remove the stinking membrane and portions of retained placental tissue.

This great dilatation of the uterus in the case of Jessie Munro appears to me to be unique, considering the length of time—eight days—intervening between the delivery and the hæmorrhage. The historical bearing of this question is discussed at great length, and with his usual ability, by Dr M. Duncan in his paper upon the “Investigation of the Interior of the Uterus by the Carbolized Hand at long Intervals after Delivery” (*British Medical Journal*, Oct. 1877, p. 383). But in Dr Duncan’s case there referred to the interval after delivery was only 80 hours, *i.e.*, $3\frac{1}{2}$ days, after delivery. The longest periods mentioned in his paper are the introduction of his whole hand by Chapman, five days after delivery, to remove an adherent placenta, and the introduction of the hand to examine the interior of the uterus by Haddon on the seventh day after delivery.

The portion of firm clot or placenta was unfortunately not retained for examination. But I made the strictest inquiry of Dr Rendall, and ascertained from him that at the delivery the placenta and membranes were carefully examined, and found to be entire, or at least considered to be so.

The subsequent examination of the polypoid mass by Dr Hamilton proves that it had nothing of placental structure in it, so that this fact also tends to support the correctness of Dr Rendall’s observation after the delivery, although it is by no means certain that the portion removed was not placenta. The polypoid mass must have formed in the course of the lying-in period from the slow granulation of a raw portion of the uterine surface. Most probably it had been the surface to which the firm mass removed by Dr Rendall had been originally adherent, and it must have been in a condition in some degree unhealthy, seeing that, instead of becoming covered over with epithelium, it granulated up and projected into the interior of the uterus. I am therefore inclined to believe that through this unhealthy area, afterwards covered with granulation,

the septic poison originally entered, even although at the post-mortem no micrococci were found in it. It would appear that in connexion with this dilatation of the uterus the septic poison entered, probably in very small amount, and, finding free entrance into the blood by the dilated uterine venous sinuses, rapidly reached by the blood-current the lungs, where it settled, multiplied itself, and became the focus of infection and the source of fatality.

The condition of matters in this case affords evidence of the importance of puerperal clots as agents of dilatation and hæmorrhage, even at considerable periods after delivery, so ably pointed out by Dr M. Duncan in his paper upon puerperal clots and coagula recently read to this Society, and reported in the *Edinburgh Medical Journal* for March of the present year, and so frequently met with in the practice of every gynæcological physician.

In the case of Janet Montgomery matters were quite different. In her case the membranes were putrid and easily lacerated, and there had been portions of the placenta attached. There was also unmistakable evidence of syphilis in her case. The lochia became rapidly abominably fetid, and the fingers were introduced with the view of removing this source of putrescence from the patient's uterus. There was no recurrence of the hæmorrhage in Jessie Munro's case, which tends to show that the clot, true to the traditions of such structures, had been the chief cause of the uterine dilatation and bleeding.

In the earlier part of the attacks the same method of treatment was adopted in both cases. That is to say, the uterus was kept contracted with ergot, and the cavity was, from time to time, washed out with a solution of carbolic acid. Yet both cases went wrong, and in the same manner. This fact produced a strong impression upon my mind, and made me doubt whether in such cases as Janet Montgomery's it is prudent to interfere with nature's efforts at removing the stinking debris before the onset of febrile symptoms. I do not see how we could have done otherwise in the case of Jessie Munro, as the danger from hæmorrhage was imminent and urgent. But I certainly shall in future be more chary of attempting by manual exploration removal of retained portions of stinking membrane and placenta, since I saw the result in Janet Montgomery's case, and will wait till some obvious symptoms warrant interference. A little after I had attended Janet Montgomery I had a private patient whose lochial discharge became extremely fetid, but who showed no symptoms of fever. Having been so disappointed with Montgomery's case, I left my private patient alone, and contented myself with the administration of ergot by the mouth, and the use of disinfectant vaginal washes, with the happiest results.

In common with most obstetrical practitioners, whether in the course of abortion or during the lying-in period after delivery at term, I have often seen good results follow clearing out any

putrescent materials that could be removed by the finger, and the subsequent use of antiseptic washes. But it is a question that admits of discussion whether the proceeding be not fraught with some danger, and had not better be delayed until some evidence of septic absorption be demonstrated, as it by no means follows that putrid lochia will induce fever, any more than it follows that if the lochia are sweet the patient is not suffering from septicæmia. It would appear to be quite rational to suppose that the rawed surface, from which a nodule of placental tissue was torn off, would possibly form an area through which the putrid lochia could be more rapidly absorbed than the same surface when covered with its original nodule, which we may with fairness suppose was more of the nature of a secreting than of an absorbent surface.

Be this as it may, symptoms of septic infection in both these cases supervened upon the introduction of the hand and removal of attached nodules, even though the most diligent means were subsequently employed to prevent accumulations of septic elements within the uterus by the use of strong antiseptic lotions. This occurrence further suggests the question whether, under such conditions, one does best to use antiseptic lotions, or whether it would not be preferable, if practicable, to wash out the interior of the organ with some strong solution on a piece of sponge, hoping thereby that the raw surface should be rendered less likely to absorb objectionable matters.

The remarks above mentioned, of course, refer to the removal of retained matters from the uterus some time after delivery; they have no bearing on the question as to the removal of the uterine contents at delivery. Every accoucheur is agreed that the greatest care ought to be taken at delivery, by the introduction of the carbolized hand if necessary in doubtful cases, to make certain that no portion of membrane or of placenta is retained in utero.

It is difficult to imagine how the septicæmia originated in the first case if it had not been from the air of the lying-in ward. That it was self-infection in the second appears to admit of little doubt, as the membranes and placenta were unhealthy from the very first. Though we have the mighty name and experience of Spiegelberg against the view, I cannot help believing that unhealthy membranes of the fetus are apt to predispose to septicæmic conditions.

I had the mournful opportunity to see in consultation a case similar in origin to this one some time ago. The child was small and constitutionally syphilitic, and the membranes at delivery were putrid. This patient succumbed to a well-marked attack of septicæmia, with both uterine and peritoneal symptoms. But in the case of Jessie Munro there was no bad smell to suggest any danger. There were, indeed, no symptoms of a doubtful character, except the rigor on the day when her child was taken from her.

There had been some rather high temperatures in the house about the same time, and some parametric cases; but none of these seemed to be of a really alarming character, and we had no reason to regard the hospital at the time as otherwise than healthy. The patient showed so little symptoms of anything being wrong that she rose without leave on the eighth day, she felt so well. There was, indeed, no reason for apprehension regarding her till the severe secondary hæmorrhage and enormous dilatation of the uterus came on. This was followed, however, by febrile symptoms of the most serious order, rigor following on rigor; and although there was absolutely no pelvic or abdominal symptom, the patient's general condition became soon alarming in the extreme. There never was any evidence of involvement of the pelvic organs, and post-mortem examination proved that they were perfectly sound, the uterus being well involuted. I think it is of some importance to demonstrate, that puerperal septicæmia, even when subacute, may run its course with positively no pelvic and no abdominal disease. The symptoms that were detectable were pulmonic, and not pelvic. This led to considerable doubt as to whether we had to deal with a case of septicæmia or of acute tuberculosis. Indeed, as noticed in the record, the lung appearances were so extremely like the naked eye appearances of tubercular deposits, that on first sight Dr Hamilton believed that we had tubercle, and not septicæmia, before us even at the post-mortem. It was only when he discovered the well-known wedge-shaped embolic patches on the outer aspect of the lungs and in the spleen that he was led to doubt the presence of tuberculosis. Of course, on microscopic examination the affair was put beyond a doubt, by proving the small oval white nodules to be air vesicles filled with accumulated exudation, enclosing millions of bacteria, and also that there were septic emboli in the terminal branches of the pulmonary artery.

The difficulty of diagnosis was all the more, that it is well known that acute tuberculosis frequently supervenes during the lying-in period. I am, of course, speaking at present of subacute septicæmia. It is, I need hardly say, a well-known fact that both venous and lymphatic puerperal septicæmia may run a very brief course, and, arriving at a fatal termination through the destructive changes induced by them in the blood, may leave behind them no trace of their existence in the solid organs, pelvic or other. But in dealing with subacute cases it is commonly expected that we should have some local manifestation connecting the attack with the genital organs, some uterine tenderness, abdominal distention, parametric or perimetric swelling, etc., etc. These are so frequently present that the general assumption is a just one. Still the present case shows that it is not universally true; for here we find a well-marked case of septicæmia pursuing its course to a fatal termination, and yet the uterus and other pelvic organs, as well as the entire peri-

tonæum, were found to be absolutely healthy on post-mortem examination. It is therefore clear that septic material may enter the blood through the uterine surface and infect distant organs, such as the spleen and the lungs, without leaving its mark upon the pelvic organs as it goes along. So far as the involvement of the peritonæum is concerned, much clearly depends upon the channel selected by the poison. If it passes onwards by the lymphatics, then the peritonæum as being a large lymphatic gland spread out suffers; if it take the course of the veins, as it appears to have done in both our cases, the peritonæum may remain intact.

In the case of Janet Montgomery there was ultimately detected the presence of local disease. But even in this respect a usual character of such inflammatory action was detected. It will be observed in the record that no abdominal tenderness could be detected on the freest manipulation. That being so, and as I did not wish to examine per vaginam a case regarding the nature of which there was no little suspicion, I never examined the patient after the onset of the febrile symptoms until she had recovered and was about to leave the hospital. Proceeding then to examination before discharging the patient, I was surprised to find a considerable mass of osseous hardness occupying the situation of the right broad ligament, and possibly also extending to the right ovary. Indeed, I had not the slightest idea that any such condition had been present until I detected its remains. There had been a little abdominal distention for a day or two, but there was positively no pain, and the swelling was too deeply placed in the pelvis to allow of its being detected by abdominal palpation alone.

In the case of Jessie Munro, however, there was never even the slightest indication of abdominal distention, and we could outline the uterus per abdomen throughout the case with ease.

The disease of all others that gives the greatest trouble in establishing a differential diagnosis between itself and puerperal septicæmia is perhaps typhoid fever. It appears to me that while the ordinary characters of a well marked case of typhoid or of puerperal septicæmia, be it of the venous or the lymphatic types of the latter, are sufficiently distinctive to enable us to distinguish between them, anomalous conditions may be present in either affection which render it next to impossible to decide the question. Certain it is that high temperature and pulse, with abdominal distention and tenderness, combined with diarrhœa, may be present in either the one or the other.

It is also certain, from such a case as Jessie Munro's, that the complete absence of any involvement of the pelvic organs cannot be calculated upon as excluding the possibility of septicæmia. Indeed, it seems that only a strict scrutiny of the individual symptoms, with careful investigation of the probability or improbability that the patient had been subjected to the poison of typhoid, can be relied upon as enabling us to decide in a doubtful case. But

I am not concerned at present in comparing the distinguishing characters that divide puerperal septicæmia from typhoid fever, as all I wish to state as a deduction from the observation of such cases as Jessie Munro's is the fact, that the entire absence of pelvic and abdominal inflammation by no means warrants any one in asserting that a doubtful case is not septicæmic.

The treatment adopted in the progress of the cases was to support strength by milk, nutrients, and ultimately port wine; to moderate the fever by small, frequent doses of aconite and large doses of quinine. In the second case we tried first tincture of the perchloride of iron, with potash chlorate, and subsequently the latter drug without the chlorate. The urgent cough had also to be treated with poultices, carbonate of ammonia, and squills. The iron appeared to improve matters, but we thought that it or the quinine ultimately disturbed digestion so greatly that we had to discontinue their use and have recourse first to castor-oil and then to a mercurial purge. After that we did not return to the iron and quinine, but employed the salicylate of soda. The most I can say for the latter is that it was better borne than the iron and quinine, and that the patient did improve. But whether it was *post* or *propter hoc* it is impossible to determine. I should mention, also, what should never be forgotten in the management of these sad cases, that much rest and relief was obtained by the first patient through the use of morphia.

ARTICLE III.—*The Hygiene of the Infectious Fevers.* By J. W. MILLER, M.D. and L.R.C.S. Edin., Consulting Physician Dundee Royal Infirmary, Examiner in Medicine and Pathology, Aberdeen University.

(Read at the Annual Meeting of the Forfarshire Medical Association, held in Arbroath, 8th July 1880.)

SIXTY thousand one hundred and sixty-two lives were sacrificed in England during 1878 to these infectious diseases—smallpox, scarlet fever, measles, diphtheria, hooping-cough, typhus, enteric, and simple continued fever. The latest information available for Scotland is for 1876, when the mortality was 8739. All these diseases are preventable. The immense importance of this subject is therefore abundantly manifest; and two communications by Drs Ransome and Vacher, which appeared in the *British Medical Journal* of May 8th, suggested to me that much practical benefit might be gained by introducing it for discussion at our annual meeting, and for this reason especially, the very great diversity of opinion, and therefore of practice, which prevails with regard to the sanitary precautions which should be enforced. This discrepancy has a bad effect in more ways than one. Firstly, as regards ourselves, it unavoidably occasions criticism on the part

of the non-medical public, not complimentary to the wisdom and scientific knowledge of the profession; but, secondly,—and this is more important,—the opinion is apt to be formed that little is certainly known on the subject of contagion,¹ that our instructions are founded on mere guess-work, and are therefore possibly all wrong. A wide-spread scepticism still exists as to the reality of infection, many intelligent people still looking on such a belief as a sort of weak-minded superstition, and this scepticism is fostered by the frequent collision of medical opinion. The further very practical evil also results, that so long as this doubt exists to any great extent, sanitary measures will have but partial success; because, unless those persons on whom it devolves to put them in force believe thoroughly that they are effective for their purpose, they will be applied in a perfunctory and inefficient manner, the result will probably be unsuccessful, and so discredit is brought upon the system, and the sceptic sees in the failure a certain proof that he was right, and that sanitation is a myth; and so the evil perpetuates itself. We need not be ashamed to confess that there is yet much to learn, but enough is known, and with certainty, to guide us to measures which, if intelligently carried out, would assuredly prevent a large amount of disease and death.

It is not probable that unanimity can be attained as to what diseases demand quarantine measures, and the necessary duration of these, but it appears to me that it should be possible to come near an agreement as to some broad practical rules on these points, by which we might regulate our practice, and to which a practitioner might point in his dealings with dissatisfied patients, in proof that he is not pursuing some mere whim or crotchet peculiar to himself. The laxity of practice at present is simply absurd. Visitors come and go between infected houses without let or hindrance, often building themselves up in the curious belief that if not afraid they are safe. As well may the soldier on the battlefield imagine that absence of fear will prevent him being shot. Clothes, provisions, books, toys, are freely interchanged without any attempt at disinfection; convalescent patients and members of infected families mix in society, attend crowded meetings and church, and children return to school, before it is possible that power to infect has ceased. Convalescents from measles, for example, frequently re-appear at school after a fortnight's absence or less. I have known an instance where a sanitary authority was requested to send for the infected articles from a scarlatinal patient within ten days after the first intimation of the case, which was said to have been reported within a few days of its commencement. If disinfection were attempted at such a period, it is easy to conceive the probable course of events; desquamation might be only about beginning

¹ I need hardly say that I use the terms infection and contagion as synonymous.

when the disinfected articles were returned, and the house would remain a centre of scarlatinal infection for an indefinite time, and doubly dangerous because now a trap, having the appearance of safety, for has it not been disinfected? On the other hand, errors in the opposite direction are of common occurrence, friends meeting in the street abstaining from shaking hands, or even crossing to the other side. On one occasion in my own experience, after an outbreak of scarlatina in a family, in which all the children were attacked within the first week, had been convalescent for about two months, and freely in the open air for one of these, I gave at the end of three months the necessary certificate for return to school; they were refused admission, and I was told that other parents had intimated that if these children returned they would remove theirs. I have heard of equally absurd fears elsewhere. So much in proof of the present unsatisfactory state of matters.

The strict enforcement of isolation is no doubt a great inconvenience, and sometimes very prolonged, especially in the instance of a large family where the disease is being always, as it were, "continued in our next," entailing, it may be, a great sacrifice both of time and money. But the neglect of the proper precautions, so far from terminating the hardship, only shifts it to other shoulders, burdening not merely one other family, but probably many, and causing to some, who might otherwise have escaped, perhaps lifelong infirmity or even death. That is no exaggeration, because if, for example, a scarlatinal patient return too soon or with infected clothes to a crowded school, the disease will almost certainly spread; and if, say, twenty or thirty cases result, it is very probable that two or three will terminate fatally, a very ordinary mortality being 12 per cent., and it is occasionally much higher. The carelessness which so widely prevails is, however, I am persuaded, much more a consequence of defective knowledge than of wilful recklessness or indifference to the welfare of others; and this need not occasion much surprise while so much contradiction is apparent amongst ourselves. All education of the people on matters of health must emanate primarily from the medical profession; and it can hardly be denied that we could with much more effect both diffuse sound knowledge and enforce sound practice were we to show a more united front ourselves.

To begin at the beginning, then, Is infection a fact? That we are unanimous on this point may be taken for granted; but the contagium should be regarded much more than it is, not as some mysterious influence, nor even a gaseous emanation, but as consisting of minute particles of solid matter. This is absolutely proved as regards the vaccine contagion, and analogy would lead to the conclusion that the contagium of other diseases are probably similar. These are given off in different diseases from different parts, from the skin, or by the breath from the mucous membrane of the throat or lungs, or from the intestinal mucous membrane, or

in other excretions, and, floating in the air, may be transported a considerable distance.¹ Every one has observed how soon a rose diffuses its odour through a room, and in all probability contagia are in like manner diffused, and become attached to clothes, etc.; and as odours have varying degrees of tenacity, so have contagia. The effect of colour is also a very curious fact. Murchison writes:² "Haller of Vienna observes that dark-coloured materials of clothing are more prone to absorb the contagion of typhus, and to convey it to other individuals, than those which are light-coloured. He found that among troops wearing dark-coloured uniforms it more frequently happened that new cases of typhus entered the hospital, after a convalescent had rejoined his corps, than those wearing light or white uniforms. It may be mentioned, also, that Stork found that in dissecting-rooms dark clothes acquired the carlaveric odour sooner, and were deprived of it less readily, than light ones." Such facts afford useful hints for practice.

Infection being granted, is it in our power to prevent or control the spread of infectious diseases by sanitary precautions, such as isolation, ventilation, cleanliness, disinfection, etc.? Professor Stephenson begins his excellent little book on the management of these diseases³ with this forcible sentence, "The prevalence of infectious disease is within human control quite as much as is that of fires." That is, I believe, a great fact, and one which should be dinned into the ears of all, medical and non-medical, till it takes firm root in their minds as an undeniable axiom. But he makes the important qualification that "from accidents and carelessness we are ever likely to have outbreaks of both," which is only a reason for greater energy in arresting the danger when it has arrived. It is too much a habit to consider it, as it were, an unavoidable fate that children must sooner or later undergo, for instance, scarlet fever and measles; but in Dr Page's opinion,⁴ if a child have either, it "points to some one's ignorance or neglect." The efficiency of public health measures is attested by the great diminution in the prevalence of several diseases—typhus fever, for example; but their power is especially manifest in controlling enteric fever, of which Dr Parkes writes,⁵ "The grand fact is clear, that the occurrence of typhoid fever points unequivocally to defective removal of excreta, and that it is a disease altogether and easily preventable."

¹ Recent observations in Paris by Dr Bertillon appears to show that the contagia of smallpox and diphtheria may even be carried across the open air from a hospital to surrounding dwellings.—*British Medical Journal*, June 5, 1880, p. 863, and June 19, p. 934.

² *Treatise on Continued Fevers*, 2nd edition, p. 89.

³ *The Fight with Infection, etc.* By William Stephenson, M.D., F.R.C.S.E., Regius Professor of Midwifery and Diseases of Women and Children, University, Aberdeen.

⁴ *Facts about Fevers, etc.* By David Page, M.D. Edin., Medical Officer of Health to the Sanitary District of Westmoreland, Ulverston, and Sedburgh, 1880, p. 6.

⁵ See *Science and Practice of Medicine*, Aitken, 4th edition, vol. i. p. 418.

The first step to be taken against the spread of infection is the enforcement of the law for registration of these diseases, so that the earliest cases may become known to the sanitary authority, which can immediately endeavour, by means of its medical officer, to trace if possible their source, and, if this be discovered, to cut off the introduction of fresh cases, and to prevent or at least limit diffusion. This at once raises the question as to what diseases should be included in the police list, and the several authorities who have enforced registration vary somewhat. From a report by Mr Ernest Hart as Chairman of the Parliamentary Bills Committee of the British Medical Association, which he has kindly sent me, I have drawn up a statement of these several lists, adding that of Dundee (see p. 312).

Thus, ten of these fifteen sanitary authorities specially name cholera, smallpox, typhus, enteric fever, scarlatina, and diphtheria; seven add relapsing fever; five, puerperal fever; three, measles; and one, erysipelas. Two of the remaining five specially mention only smallpox and cholera, including other diseases under a general description; and the remaining three make no special mention of any disease. None includes whooping-cough. I am strongly of opinion that this disease should be one of those demanding registration. The mortality which it causes is very great; in England alone, in 1878, the deaths reached the large figure of 17,784, the smallest annual mortality since 1850 having been 7905. Probably the contagion is not one which can successfully be attacked by the usual sanitary measures; but some check should decidedly be put on the attendance of infected children at school, and for this purpose it is necessary that information should be obtained of the first appearance and the extent of the prevalence of such an epidemic. I regret that here I am at variance with so high an authority as Dr Ransome of Manchester, who says¹ he considers it "hopeless to attempt, by quarantine or isolation of any kind, to arrest the spread of measles and whooping-cough. In my own experience these complaints are most frequently caught in their early stages, often before the occurrence of their characteristic symptoms." But if such be a correct view, I do not see how we can hope to arrive at the triumph of sanitation, which the same author describes in a foot-note as "that happy time when preventive medicine has been thoroughly carried out, when houses are properly ventilated, when drainage and sewerage are perfected, when the water and milk supplies are unpolluted, and when vaccination has been universally and completely performed. At this much desired epoch, to which it may be hoped we are advancing, hospitals for the reception of cases of other diseases will be an anachronism, and scarlet fever alone will have to be provided for." As to arresting or even limiting an epidemic of either of these diseases in full tide I quite agree with him, but I cannot think that if the initial cases were dealt with, sanitary measures would

¹ *British Medical Journal*, May 8, p. 689.

Blackpool.	B. B. n.	Burton-on-Trent.	Dundee.	Edinburgh.	Leicester.	Llandudno.	Norwich.	Nottingham.	Warrington.	Huddersfield.	Rotherham.	Derby.	Greenock.	Jarrow.
Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever Measles	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever Measles	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever Measles	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever Measles	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever Erysipelas	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever or any other infectious disease which the corporation may from time to time specify with sanction of Local Government Board.	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever or any contagious or infectious fever.	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever or any contagious or infectious fever of a dangerous character	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever or any contagious or infectious fever.	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever or any contagious or infectious fever.	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever or any contagious or infectious fever.	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever or any contagious or infectious fever.	Cholera Smallpox Typhus Etiotic Fever Scarlatina Diphtheria Relapsing Fever Puerperal Fever or any contagious or infectious fever.

prove so ineffectual. Moreover, the non-inclusion of hooping-cough in the police list must tend to strengthen the too common belief that its infectiousness is too doubtful to be worthy of much consideration. Now, so far from this being true, its infection is very strong, and there is evidence that it may even be conveyed by a third party.¹ Stephenson says² that it is "not propagated by a third party; . . . he will not carry it away (except by fomites) in his clothes;" he also thinks it unnecessary to absent from school, children from an infected house, provided they have had the disease.³ I feel compelled, though with all deference, to express a different opinion, and he even makes some qualifications himself, such as that there would be risk if the person visiting were to receive on clothes some of the expectoration; and as regards the healthy members from an infected family attending school, he directs "that all due care should be taken to keep them apart from the affected as much as possible." We know what kind of attention would in many households be given to this instruction. The only safe plan, therefore, is to keep at home all the members of a household in which there is hooping-cough. Considering that the contagium particles are given off in the breath and float in the air of the room, and that the degree of concentration of the poison depends on the presence or absence of good ventilation, it is difficult to see that there is no danger of its being conveyed away on the clothes of a third party. Aitken gives a convincing instance of its conveyance by fomites.⁴ A captain sent on shore at St Helena, to be washed, the clothes of some hooping-cough patients who were on board his ship, and so introduced the disease into the island, where it proved very fatal. And Squire is of opinion⁵ that fomites readily attach themselves to surfaces, whether articles used by the sick or near them, and to the clothes of attendants;" so that although the contagium may be more volatile, or evanescent, or perishable than some others, there can scarcely be any doubt but that it is communicable like them, though possibly in less degree.

Enteric fever is of necessity a disease demanding registration, on account of the undoubted efficacy of sanitary measures; but its presence in a family by no means renders necessary the isolation of its healthy members, and this should not be inferred from the fact of its being on the police list. It must be borne in mind that this fever is only infectious by the intestinal excreta, and that the poison is not present in these when fresh, but is developed by putrefaction, as in cholera and dysentery.⁶ One fact given by

¹ Case of a boy in health, except teeth-cutting, visited by some friends who had a child ill of hooping-cough at home, and infected by them, the hoop appearing after 25 days.—*The Period of Infection in Epidemic Diseases*. By W. Squire, M.D., F.R.C.P., Hon. Secretary to the Epidemiological Society, London, 1874, p. 33.

² *Op. cit.*, p. 16.

³ *Op. cit.*, p. 36.

⁴ *Op. cit.*, vol. i. p. 558.

⁵ *Op. cit.*, p. 35.

⁶ Murchison, *op. cit.*, p. 466.

Murchison¹ is conclusive proof against its communicability in the ordinary way from person to person. It is this, that during nine years, in the Fever Hospital, 3555 enteric patients were treated in the same wards, both during the acute stage and in convalescence, with 5144 patients not ill of any specific fever, all using the same night chairs, and disinfectants being only exceptionally employed, yet, notwithstanding, not one of the latter caught the disease. The infection may, however, be conveyed by the air, as by emanations from an open sewer.²

The action of the sanitary authority, however, is only half the battle, and its best endeavours to control epidemics will be vain unless intelligently and conscientiously supplemented by individual members of society in their own households as occasion arises; and it is especially in the private household that it becomes important to have an answer to the next question: How long does the power to infect last? When does it begin, and when terminate? And this is the most difficult feature of the matter, there being a great want of exact observations on which to found definite opinions. It by no means follows, however, that because we cannot fix the period of infectiousness with scientific exactitude, we should rest content with the present chaotic state of practice. The great tendency of the public is unduly to curtail the time of isolation, and in the absence of definite data to the contrary there is strong temptation to the doctor to fall in with the desires of his patients. But it appears to me that the issues are fraught with so much peril it is our duty to seek to arrive at some workable solution, and that this may be accomplished by making a careful comparison of the opinions of those authorities whose reputation renders it likely that they are able and trustworthy observers, being always careful, if I may use an engineering expression of which we have lately heard a good deal in Dundee, to leave an ample "margin of safety." Were some such general agreement arrived at, what a source of almost daily annoyance would be removed! There are few questions more troublesome to a physician desirous of giving a conscientious and practical reply than that often recurring one, "When may the children go back to school?" And if his reply happen to be that another fortnight of quarantine is necessary, he may very probably be told that Mrs So-and-so's doctor allowed her children to return as soon as the patient was able to be out of bed; and thus frequent irritating discussions arise. Dr Ransome says, in the paper already quoted from, "But there is another and more serious result of this individuality of opinion, of this want of some authorized doctrine on those points that are so frequently brought before us. Very frequently a serious difference of opinion ensues between two sets of medical advisers, the family attendant often differing widely from the school or hospital physician in his estimate of the needful

¹ *Op. cit.*, 463.

² *Op. cit.*, p. 472.

The tracing ends from right to left. | mark, where eyes were shut.

A

B

C

D

interval of isolation. Even without a sufficient foundation of facts, if the medical world were agreed as to the limit of safety there would, perhaps, not be much harm done beyond the probable waste of time involved in getting to the safe side of precautionary restrictions."

(*To be continued.*)

ARTICLE IV.—*Clinical Notes.* By ALEXANDER JAMES, M.D.

(*Continued from page 144.*)

TENDON REFLEX AND CLONUS PHENOMENA—*continued.*

ON testing the power of maintaining the equilibrium possessed by this patient, it is found to vary very much from time to time. When, as he says, "the jerkings have come on," it is almost impossible for him to stand without support; at other times he is able to do so with the feet a few inches apart, and even with the eyes shut. By means of the *tachograph* I obtained tracing *B*, and this may be looked upon as giving a fairly good idea of his equilibrium power in the absence of any clonic spasm. For the purpose of comparison I have added other three tracings—*A*, from a healthy individual; *C*, from a case of locomotor ataxy; and *D*, from a case of lateral sclerosis, showing the effect of the tremors on the tracing. It will be seen that Kellie's tracing, *B*, resembles that of the case of locomotor ataxy rather than of lateral sclerosis. But this, it must be noted, is in the absence of the spasms, and hence we may suppose that, apart from the disorders of equilibrium induced by these, this patient is ataxic. When the spasms come on Kellie's tracing at once resembles *D*. As in these circumstances, however, it is impossible for him to stand on the instrument for more than a few seconds without support, no tracing is given.

In concluding this section of my notes, I would draw attention to a probable bearing which it has on the subject of electro-therapeutics. In a paper on "Automatic and other Medical Electricity,"¹ Dr Inlach of Liverpool has described different forms of apparatus which he has devised, the purposes of which are so to act in stimulating the muscles of the limbs as to make them perform co-ordinated movements. Dr Inlach says (p. 259), "Take a hemiplegic patient, and, by automatic electric arrangement, make him raise the dragging limb as he walks, and stand as firmly upon it as upon the other; or make a paraplegic patient, in whom, for the present, walking is out of the question, rhythmically flex and extend his limbs by alternating electrization of his flexors and extensors. You do more than merely electrize the paralyzed muscles; his expectant attention is directed in turn to each moving limb, and an effort of the will is aroused as the oppressive sense of habitual inability is removed." If there is any truth in the

¹ *Practitioner*, vol. xxiii., 1879.

suggestion brought forward in this paper (p. 140), that the position of the limb has, through the condition of the nerve channels, etc., in the cord, an important influence on the muscles as regards their capability of responding to stimuli, another important advantage of electro-therapeutics as carried out in this way is apparent.

II. INCREASED VOCAL RESONANCE.

Into a discussion of the physical causes of bronchophony, and of the various conditions in which it is met with, I do not propose to enter. What I desire to do is to suggest a probable, and, as far as I know, as yet undescribed element in its production in cases of pleuritic effusion.

As the books tell us, and as we all have many opportunities of testing, an increase of the *vocal resonance*, and I may to this add *fremitus*, occurs in pleurisy only at certain parts of the chest, and at certain stages of the disease. The parts of the chest are those above the level of the fluid, and the stage of the disease is when the effusion has become partially absorbed. It is necessary, however, to note that, as regards both locality and stage, the books do not altogether agree. Thus, as regards the former, they show a tendency to limit this to the posterior aspect of the chest.

Skoda.¹—"The bronchial breathing and the weak bronchophony are in most cases heard between the lower angle of the scapula and the vertebræ, and somewhat above and below this line."

Walshe.²—"When the effusion is moderate, bronchophony may commonly be detected in the immediate vicinity of the larger bronchi between the scapulæ;" but, again, "Bronchophony may often be heard in the upper front regions when the effusion is sufficient to condense a considerable portion of the lung inferiorly."

Clapp.³—"Sometimes bronchophony above the level (of the fluid) or pectoriloquy (especially in pleuro-pneumonia or pleurisy with phthisis), heard best over the scapular and interscapular regions, on account of the usual situation of the compressed lung."

Gutmann.⁴—"Bronchophony is also heard when the lung is compressed by pleuritic exudation, but only at those parts of the chest at which the dense lung is in immediate contact with the chest wall, that is, posteriorly, between the vertebral column and the scapula, when the effusion is non-encysted."

As regards the stage of the disease, the cases in which I have observed it have been where the effusion is partially absorbed; but some of the books describe it as occurring in cases of "moderate effusion."

In a typical case the physical signs may in a general way be described as follows:—Below the "curved line" (which at this

¹ Markham's translation, p. 317. ² *Diseases of the Lungs*, 4th edit., p. 129.

³ *Auscultation and Percussion*, p. 55.

⁴ Sydenham Society translation, p. 171.

stage is beginning to show itself), absent fremitus, dull percussion, diminished breath sounds, and vocal resonance; above this, increased fremitus, somewhat high-pitched and often tympanitic percussion, weak indeterminate breath sounds, and increased vocal resonance.

What is the cause of this increase of fremitus and resonance? The usual explanation is, that as that portion of lung yielding those physical signs has lost a greater or less amount of air as the result of compression, it is more homogeneous than healthy lung tissue, and so is a better conductor of sound. While granting that relaxed lung tissue may act in this way, I wish now to show that there probably is another very important element in the production of these phenomena. To demonstrate it, let us first consider why the vocal resonance in health is so much less over the surface of the chest than over the trachea. On this matter Gee¹ says:—The lungs “are kept in a state of permanent openness or distention, which favours the conduction of sound along the air columns within the tubes. But, on the other hand, the progressively increasing number of air tubes renders the sound they conduct to any given spot progressively weaker; the voice is no longer confined within a single cylindrical tube, but is spread out and diffused by an enormous number of minute diverging tubes having a total sectional area very much greater than that of the single tube whence they spring.” We must also remember that the sound vibrations in the larger tubes will be carried in part directly through the lung substance, and however much they may lose in intensity through healthy lung tissue being a bad conductor of sound, they will be propagated in varying directions towards the surface of the lung. In this way, then, we may conclude that the vocal resonance as heard over any part of the chest wall is very much weaker than that heard over the trachea or larger tubes, because in the former the sound is very much less concentrated. There are, of course, other considerations; for example, we must remember the weakening due to the diminished reflective power of the smaller tubes, and also that the vicinity of the trachea or larger tubes will increase the resonance at certain parts of the chest. These, however, do not affect the main point as regards the cause of the weak chest resonance. To obtain an idea of what this loss in intensity may amount to, we have only to compare the sectional area of the tubes with the area of chest wall corresponding to lung tissue. The sectional area of the trachea is about $\frac{1}{2}$ sq. in., and of right and left bronchi about $\frac{2}{10}$ sq. in.; while that of the right and left chests each is about 140 sq. in. In this way, then, supposing the sound vibrations to radiate out from the large tubes to the chest wall as from the apex to the base of a cone, and remembering, also, the great extent of the inferior and internal surface of the lungs, we can imagine how great this diminution must be.

¹ *Auscultation and Percussion*, 2d edit., p. 113.

Let us now apply these considerations to our typical case of pleuritic effusion, and let us suppose that the left is the affected side. Here, owing to the partial absorption of the fluid, the bronchial tubes at the root of the lung are pervious, so sound vibrations occur in them. Those vibrations tend (either through the tubes or lung tissue) to pass to the surface of the chest, but they cannot do so in the same way as in health. Below, there is a surface of fluid upon which all those vibrations which tend to pass to the lower part of the chest will impinge, and from which they will be reflected. The direction in which this reflection will occur will be outwards and upwards, and hence the vibrations will be directed to the upper portion of the chest, and will reinforce those which pass out here directly. Thus will we have produced an increase of the resonance and fremitus, and from the following data a rough idea may be formed of the amount of that increase.

In our typical case let us suppose that the fluid with its "curved line" above is found by percussion to be behind at the level of the sixth rib, laterally about the third or fourth, and anteriorly about the fifth rib. This represents an area of about 60 sq. in., so here the vibrations, instead of passing out in varying directions so as to reach a surface having an area of about 140 sq. in., are concentrated and reach a surface having an area of (140 — 60) say 80 sq. in. There will thus be an increase of resonance and fremitus as compared with the normal, and we may suppose that, with patent bronchial tubes, the greater the amount of effusion the greater will be this increase. Practically we see this exemplified in the gradual diminution of fremitus and resonance as the fluid becomes more and more absorbed.

I therefore would suggest that, in this restriction of the passage outwards of sound vibrations to the upper portion of the chest, we have an important item in the production of increased fremitus and resonance in cases of pleuritic effusion.

III. OBLITERATION OF THE INTERCOSTAL SPACES.

In the wards I have had many opportunities of noting cases where, with a considerable amount of fluid in a pleural cavity, there existed neither any marked increase in the perimeter of the affected side, nor obliteration of the intercostal spaces; and in explaining such cases I am in the habit of quoting from Dr Gee¹ and Dr Douglas Powell.² I have also had opportunities of noting the closer association of increased circumference of the side and bulging intercostal spaces with cases of empyema than of serofibrinous effusion; and in empyema, and also in cases of lung

¹ *Auscultation and Percussion*, p. 28.

² "On Some Effects of Lung Elasticity in Health and Disease."—*Med. Chir. Transactions*, vol. lix. p. 165.

tumour, I have noted a frequent occurrence of dropsy of the corresponding side of the trunk.

That in empyema the pressure signs should be so marked we may suppose is due to the more acute pleural inflammation producing at the same time a greater amount of paralysis of the underlying intercostal muscles and a greater intrapleural tension.¹ The œdema of the side of the trunk may of course be caused by direct pressure on veins, etc., but, apart from this, it may, I think, be due to the fact that the interference with the proper performance of the respiratory movements caused by empyema or lung tumour will impair to a greater or less extent the absorption of lymph. The influence of the respiratory movements on lymph absorption is well known, and Dybkowsky² has shown that fluid artificially introduced into the intercostal tissues finds its way into the pleural cavity as the result of the respiratory acts. This latter experiment is specially interesting in connexion with empyema, for here we have, in addition to interference with the respiratory acts, high intrathoracic tension and an altered condition of the pleural walls.

ARTICLE V.—*Notes of a Case of Abscess in Abdominal Cavity.*

By JOSEPH BELL.

ON the evening of the 13th of April 1880 I was asked by Dr Playfair to see with him in consultation Mr M., West Coates, whose case he regarded as one of great danger.

I found the patient a spare, somewhat delicate-looking man, complaining of great pain in the lower anterior portion of abdomen. The abdomen was generally tense and wooden in feel, especially so in pubic and iliac regions. If anything, the tension was more marked in left iliac fossa; through the thin walls I fancied I could feel coils of intestines matted and rough. He was vomiting frequently and was obstinately constipated. Dr Playfair communicated the following history:—

Patient's illness began early on the morning of April the 2d, with severe abdominal pain, vomiting, and fever. He had been visiting a friend the night before, with whom he had had supper, and had eaten some new bread. Other than this there was no discoverable cause for his illness. For the pain and vomiting of which he now complained he was ordered poultices to the abdomen, and bismuth and opium internally with ice and milk. For four or five days he greatly improved. He was almost quite free of pain, the sickness had ceased, and

¹ See "Transudations and Exudations," *Med. Times and Gazette*, January 1880.

² *Ludwig's Arbeiten*, 1866: "Ueber Aufsaugung und Absonderung der Pleurawand."

the bowels had been freely moved with enemata and castor-oil. On the 12th April, however, the pain and vomiting suddenly returned and constipation set in.

As to patient's previous history, it may be mentioned that he had never been robust, and had twice been attacked by pleurisy.

Per Anum.—An examination by the anus revealed the following:—The anal aperture gaped and was funnel-shaped, and a little bloody serum stained the examining finger. From previous experience this prepared me to expect evidence of an intussusception which I have frequently felt per anum, and at first I thought it was so, for at the extreme reach of my forefinger a softish, rounded tumour, as large as a small orange, was easily felt. Tracing the boundaries of this, however, it was not an intussusception, as the finger could be pushed past it easily, and healthy bowel was felt beyond it; nor was the pressure of this tumour on the rectum the cause of the obstruction, as the bowel above it was flaccid and empty.

I now tried to make out what this tumour was and what it contained. It was *not* bladder, for the catheter proved it to be empty, or nearly so, and it (the bladder) was obviously compressed and irritated; the patient's micturition, previously healthy, being frequent and scanty.

The tumour gave to the finger the impression that it contained a thick fluid which could be displaced, and I thought I also felt a coil of intestine, or something of a more solid character, behind and above the fluid portion.

The diagnosis was of an abscess or suppuration in the rectovesical *cul-de-sac* of the peritoneum, probably limited by adhesive inflammation gluing together the intestinal coils, but with at least one loop or coil hanging in the fluid and deprived of peristalsis, hence the obstruction.

What, then, was to be done? A free incision from the rectum into the tumour was very tempting, but from this we were restrained by the fear of (a) hæmorrhage, which if present could not be checked, and (b) of hernia of this coil into the rectum, which also would have been a serious if not hopeless result.

We ordered hot fomentations to the abdomen; nothing by mouth except very small quantities of iced milk. Gave a full hypodermic injection of morphia.

Next day we met again; vomiting still continued, but with less urgency, there being less to vomit. Patient had slept after the injection, but his aspect was worse; decubitus dorsal; pulse small and shabby; temp. 101°; and the breath had a characteristic and horrible odour. I had brought with me Dieulafoy's large aspirator, and introduced the largest needle, guarded by my finger, into the tumour by the rectum. By this means I drew off about thirty ounces of pus of the consistence of thick cream, and with a mingled odour of fæces and gangrene so horrible that, though the day was cold,

we had to cover the patient with clothes and throw open door and windows. After obtaining all the pus that would come I then reversed the action of the instrument without moving the needle, and washed out the abscess cavity, freely and frequently. His relatives, who had both seen and smelt what we drew off, formed a most unfavourable prognosis, in which we could hardly help sharing. Next day, however, the whole aspect of affairs had much improved for the better; vomiting had ceased, two healthy evacuations were obtained by injection, and the patient was able to eat. Temp., 99°; pulse 90; gaining in strength.

I did not see him again till the 20th April, a week from my first visit. When Dr Playfair wished my opinion as to the condition of the tumour before mentioned, which had not entirely disappeared, I was told that three days ago he had begun to pass by the bowel, mixed with the feces, a yellowish fluid like what had been drawn off by the aspirator, and smelling as horribly. From this I concluded that the abscess had burst into the rectum. I found it still there, though lessened in size, and containing now no fluid, but the coil of intestine could still be made out, and now it was obviously packed with feces. I ordered a good dose of castor-oil, which was retained and acted freely, since which the patient has gradually but slowly recovered.

I have ventured to lay this brief account of this case before the Society on account—1. Of its rarity, as I have never seen nor even read of a similar one. 2. From its fortunate issue after the very simple and yet decided treatment, for the critical, almost hopeless state of the patient could hardly be exaggerated. 3. With the hope of eliciting some observations from my fellows as to their own experience of such cases.

ARTICLE VI.—*Notes on Two Cases of Spina Bifida in the Cervical Region.* By JOHN M'WATT, M.B., C.M., Resident Medical Assistant, Glasgow Royal Infirmary.

SPINA BIFIDA is a malformation difficult to cure, and, when left alone, generally terminates fatally by rupture of the tumour and draining of cerebro-spinal fluid. Different methods of cure have been tried; but considering the nature of this abnormality, the most sanguine can never expect that any treatment will produce the same satisfactory results as are obtained in other forms of congenital malformation. The method of treatment brought into notice by Dr Morton seems to be looked upon by the profession with favour, and from various cases reported, promises to go far in the way of curing cases suitable for treatment.

The following cases came under my care while acting as house-surgeon in the Edinburgh Royal Infirmary, and I have thought them worthy of being noted:—

CASE I.—Jane Robertson, aged three weeks, a healthy child, of average size, was admitted into Dr Duncan's wards in the Edinburgh Royal Infirmary, 13th March 1879, suffering from spina bifida. The tumour was situated over the 2nd and 3d cervical vertebrae, and was fluctuating. It had a broad base, and had greatly enlarged since birth, and was now about the size of a small orange. It increased in tension on crying. The skin over it was thin looking and livid. Next day a small amount of clear fluid was drawn off, and two days after this enough of the contents being removed by a canula to render the tumour flaccid, 20 minims of Dr Morton's fluid were injected:—

R Iodi, grs. x.
Pot. iod., ℥ss.
Glycerine, ℥j.

On the following day slight inflammation and hardening were observed. The inflammation during the next few days gradually subsided, while the hardening increased.

15th April.—As the tumour was softening, and fluctuation could be detected, tapping was again resorted to, a tablespoonful (all that would come) of clear fluid being drawn off. In a few days afterwards 20 minims of the iodo-glycerine solution were injected.

15th May.—A trocar and canula was introduced, but no fluid came away.

4th June.—The tumour being greatly diminished in size, and quite hard, the patient was dismissed. In September I called and saw the child at its home, when the tumour was again found beginning to enlarge, soften, and fluctuate. The child's head was large and hydrocephalic. It died of hydrocephalus a few weeks afterwards.

CASE II.—Charles Ramsay, aged three weeks, was admitted to Dr Duncan's wards, 27th May 1879, suffering from spina bifida in the cervical region. The family history was thoroughly good, and the child was strong and healthy. The tumour was observed at birth, had been gradually increasing, and was on admission about the size of a mandarin orange. It varied much in size and in tension, sometimes being loose and flaccid, at other times large and tense. The skin was so full of distended veins as to give it the appearance of a nevus. It was sessile, with a broad base. When flaccid a bifid condition of the 4th and 5th cervical vertebrae could be felt, but no solid contents. It was very sensitive to touch, as the slightest handling caused the child to cry bitterly.

29th May.—When the tumour was tense, Dr Duncan tapped and drew off about a drachm of the usual clear limpid fluid. Two days after 20 minims of Dr Morton's fluid were injected, and in three days the child was sent home, the tumour being hard throughout. Dr M'Watt of Dunse, in whose neighbourhood the child

lived, took charge of the case, and found during the months of June and July the tumour gradually diminishing. In the middle of August a softening and fluctuation were again distinct. I, while in the country, drew off a teaspoonful of the fluid, and without removing the canula injected half a drachm of the iodo-glycerine solution. In the end of October the tumour was shrivelled, small, and quite solid. When first seen in May, touching the tumour produced much pain, but now it can be handled even roughly without causing the child to cry. The child is now strong, thriving, and healthy, but sutures and fontanelles are not closing so rapidly as they usually do.

As is well known, spina bifida is not so often met with in the cervical region as in other parts of the spine, and when interfered with in the above-mentioned region seems always to terminate fatally. In these two cases, however, the results have been different, not the slightest evil consequences following the interference. In the one case a complete cure was effected, and in the other something not far short of it. These cases may be added to the list of successful cases, treated according to Dr Morton's method, and are, as far as I know, the first in the cervical region that have been recorded as successful. Certain points of interest may be adverted to.

1st, As to operation. In case No. II. the second tapping was followed immediately by the injection without removing the canula. As a certain amount of risk must follow each puncture, advantage is gained when diagnostic reasons do not interfere by tapping and injecting at the same time. The smallest canula that would carry the fluid was used. Hemorrhage was carefully stopped by the fingers, and subsequent draining of fluid, which is a source of great danger, was prevented by the application of flexile collodion and cotton wool. In none of the tappings was the whole of the fluid drawn off. The infants cried during each operation, but after it was over looked happy and cheerful as before.

2d, Hardness was always produced, but with slow contraction of the tumours, and great tendency to re-accumulation of fluid. This re-accumulation may occur even when the part is blocked off from the spinal canal, as took place after the second injection in case No. I. The thin condition of the skin, and its containing few, if any, contractile fibres, may explain the slow contraction.

3d, These cases illustrate the great difference in the size of the abnormal apertures in the spinal canal, which may exist in different cases.

In Case I. the opening between the tumour and spinal theca must have been large, as the tumour, although of varying tension, was always full. It could be easily diminished by pressure, and on removing the pressure it quickly refilled. In Case II. probably the opening was small, as for hours together the tumour was quite

flaccid, and, when full, it could be emptied with difficulty, again refilling slowly.

4th, There are indications of risk to the child in a tendency to over secretion of cerebro-spinal fluid after cure. One can understand how the spina bifida itself may induce a habit of over-production of cerebro-spinal fluid, which may go on even after the tumour is cured.

ARTICLE VII.—*Remarks on Obstetrics.* By DR G. HAMILTON,
Falkirk.

I VENTURED, in the June number of your Journal, to make a few remarks on the Quarterly Report of the Edinburgh Royal Maternity and Simpson Memorial Hospital, published in your previous number; and I now take the same liberty with the quarterly report of the institution given in your August number. My object in doing this, I hope I need hardly say, is solely with a view to the advancement of scientific midwifery, and especially as connected with the position which all its alumni would wish that Edinburgh should occupy as a school for the teaching of obstetric medicine.

Mere "teaching," however, it is plain enough, cannot long sustain educational establishments, unless along with that teaching successful results in practice can be pointed to; and hence the importance of having successful operators and practitioners as well as good lecturers, or, what is better, the two combined. Every one knows with what force this applies to our medical and surgical hospitals, and I do not see why it should not also apply to the maternity hospitals.¹

Any one who has long practised an art naturally looks at it chiefly from his own point of view; and when a large measure of success has attended his practice, no doubt he will be inclined to be what is called "dogmatical" as to the means he has employed in procuring that success. I do not mean to claim exemption from this dogmatic tendency; but, as it must be allowed

¹ This is not the first time I have had to make remarks on this subject, for in the *British and Foreign Medico-Chirurgical Review* for October 1871 I said:—"I cannot but lament to see that in two maternity hospitals of the two chief cities in Scotland (Edinburgh and Glasgow) the infantile mortality should agree so little with that of my own practice; for I find, on reference to the annual reports of these two institutions for the last three years, that the infantile mortality in the Edinburgh Hospital ranges from about 1 in 5 to 1 in 29, and in the Glasgow institution from 1 in 11 to 1 in 27. Now, surely the discrepancy here shown, compared with the results I have given in my own practice, must admit of some explanation, if not of amendment; and although I grant the subject is a delicate one, upon which I would speak with all kindness, yet I think both the interests of the public and the character of our profession require that it should be investigated." It is proper to say that in these maternity reports non-viable as well as viable children were apparently included.

that success in the same department may often be attained by very different means, I should be very glad to hear that others have been equally or more successful in their practice than I have been, whatever means they may have employed. For comparison, therefore, if not for much edification (for I have so often stated my views on obstetrical practice that they are already well known), I shall, before concluding this letter, bring my series of cases, already nearly completed, up to the present date, and shall also give a brief summary of the chief means by which I believe the results given have been obtained. I shall do this for the two reasons that, 1st, I see the results of my practice constantly referred to by writers both on this and on the other side of the Atlantic; and, 2d, because recent discussions in societies and in periodicals show that at present the subject is one of engrossing interest to the profession.

In my remarks in my former note, as at present, I have wished to call attention to the importance, in these maternity reports, of having the details stated in such a way, and with such precision, as that not only the chief results can be at once seen, but so that also, possibly, a correct idea may be formed of the causes which have produced them; and I trust I need not repeat that I hope, though I shall have to desiderate some want in this respect in the present report, and to make some other remarks that may not be pleasant, that my observations will be received in a friendly way by the gentlemen concerned, and just as if I had been present and were making them when the report was presented to the Obstetrical Society. Of course, I naturally compare other practices in this department with my own, in which it must be allowed the patients are probably possessed of at least an average amount of health; and it may therefore very properly be said that the comparison of mine with a maternity practice is not altogether fair. This is at once allowed; but the discrepancy is not so great as may at first sight appear, when the decidedly premature (that is, say, at or before the sixth month) and the putrid and already dead children are eliminated from both labours. Indeed, except perhaps in forceps cases, in which contracted or rachitic pelves have to be encountered, there seem no very strong reasons why, if the child was fairly viable when the labour commenced, it should not be born alive in the one case as well as in the other. In my own statistics the arrangement I have adopted as to the children has been into the two classes of viable and non-viable. A knowledge as to both may be useful in certain points of view, but it is with the first that we have almost alone to do in judging as to the value of any particular line of practice, and it is as to the failures in this class that we require precise information. I am glad to see that this broad distinction, the omission of which formerly utterly confused and vitiated all such statistical reports, has now been adopted by most obstetrical writers; and I regret to find that the same has not been

done in the two reports of the Edinburgh Maternity which have been issued. It may also, no doubt, be said that raw students, entrusted with the management of maternity cases, cannot be expected to furnish results equally favourable with those of experienced private practitioners, and that in this respect maternity hospitals differ very much from both medical and surgical hospitals. Something, I think, has to be allowed in this respect also, but not a great deal either, if we suppose proper arrangements to have been adopted. Indeed, in some respects the advantages to maternity patients are very decided, for they have generally in difficult cases the command of the best skill in the locality. I hold, however, that it is not in the *very difficult* cases that the principal foetal losses occur, but chiefly in those that are *only moderately so*. For example, I calculate that, in my forceps list, only about 2 to 4 per cent. were cases where the head was at the brim, and that therefore any one with the most ordinary skill would have been competent to manage the rest;¹ but, then, I also hold that neglect in getting this assistance for two or three hours after the second stage has continued for two, will often be fatal to the child, and is, indeed, the usual cause of death where there is nothing else obviously to account for it. If this be granted, it seems very plain that in every maternity hospital there should be at least one competent medical attendant who is not engaged in general practice, and whose sole duty it should be to apply the forceps in simple cases, and give other such necessary directions and assistance as might be required. If such were done I cannot but think that the chance of life for viable children born in maternities is just about as great as for those in a private practice. I have said before, and I repeat, that I think this vital.

It is clear we must have precise details in these reports, else we cannot make proper comparisons at all, and that their value must therefore be in great part lost. As an illustration of this, I said in my former note to you that I had to *assume* that 10 children were viable: while in the report in your August number it is said the number of children (with twins) was 160. But when we make the deductions I have indicated (that is, deduct the children that *could not* have been born alive), the proper number to calculate on appears to have been only 153; and it requires that we should *assume* that the child in the placenta previa case was viable, as it is merely said that it was "lost," the putrid children being placed under the same heading; and the same has to be done in a case of prolonged labour from small pelvis, "terminated by long forceps." I should say that, in all the cases where the children are "lost," but are not putrid, the details should be very precise where they

¹ I say my percentage of brim cases has been two to four. My belief is that a great portion of what have been called "brim" cases have really been high intra-pelvic ones. Of course, if they be "attacked" too soon, brim cases may be made plentiful enough.

are classed as non-viable, and especially I would like to know what, in these cases, was the kind of labour as to severity, and what was the length of the second stage. These are so important that my belief is, that when they are not given the most usual cause of fetal death has not been laid before us. In the present report I find no proper guide in this respect, for merely the average duration of the stages of labour in most of the cases has been given. But the average may have been quite proper and favourable, while in individual cases the reverse may have obtained.

Again, I find that in the 159 cases the forceps were used four times, or about once in every 40th case. In 1 of these the child is stated to have been still-born; but I do not find it stated positively that the children in the 3 other cases were born alive, or what was their condition. The one given as still-born apparently occurred among the externs, and 2 others among the interns, and all I can learn on turning to the "mortality" heading is that the causes of death in 3 of the former and in 2 of the latter "could not be determined."

As far as I can make out, however, the number of viable children that were still-born was 8, viz., 5 externs and 3 interns. In case I may be mistaken, I shall mention these as they are given:—1st, in placenta prævia case; 2d, one at seventh month; 3d, 4th, and 5th, "without ascertainable cause"; 6th, one in forceps case; 7th and 8th, where the "cause of death could not be determined." If I am correct in this enumeration, there has, therefore, been for this quarter a fetal mortality of viable children of about 1 in 19, or at the rate of more than 52 per 1000. The general summary of fetal mortality among the 160 children, again, would seem to be, viable children, 8; non-viable, 7; in hospital shortly after birth, 2—in all, 17, or more than 1 in 9; that is, at the rate of about 111 per 1000.

We have no information in this report as to whether ergot was administered in any of the cases. Has it been banished from the maternity practice, and have the students been forbidden to use it except as a hæmostatic? I should be very glad to hear so, for this is what I have long contended for. At any rate, I think some notice should have been given to this point in the report, considering the prominence it has taken in modern obstetrics. In commenting on the discussion on the use of the forceps in the London Obstetrical Society last year, the editor of the *British Medical Journal* says, "Its chief alternative, ergot, has for some time been dying a natural death; and it was with considerable satisfaction that we heard Dr Lombe Athill state, in the course of the discussion, that its use is abandoned, and even prohibited, in the Rotunda Hospital, except in cases of flooding." The editor goes on to observe "that in modern midwifery the forceps has taken the place of the ergot;" and he might further, I think, have said that, as the ergot was formerly often used, so must also the forceps be, with the pleasant difference, however, that by their judicious

use the infantile mortality may be in great part abolished. So much for the ergot; and perhaps chloroform in obstetrics ought to stand, except in serious operations, nearly in the same category. This specially for our cousins across the Atlantic. Of course, I exclude version, craniotomy, etc., in which its use is purely beneficent, and have in view its long-continued use in natural labour, for, say six, eight, or twelve hours, and its use in cases where flooding may be anticipated. So strong is my feeling in regard to the impropriety of its use in the two last, that, if death occurred when using it in such, I would view it as almost an indictable offence. I determinedly refuse it in all my ordinary forceps cases, except, it may be, occasionally, at the very close of labour.

The maternal mortality in the 159 cases appears to have been 2, and another patient in the hospital seems to have had a pretty severe attack from septicæmia, but none of these occurred where the forceps were used.

There are no injuries reported as having been inflicted on the children, but the injuries to the mothers in the labour process seem to have been both numerous and severe, and most of these appear to have occurred in the hospital. 1st, It is stated that Tarnier's forceps in one case "exhibited a tendency to catch and cut the mucous membrane of the vagina as the head passed down." 2d, In a face presentation it is said the perineum "was preserved nearly intact, but so great was the stretching that subsequent sloughing of the vaginal outlet and of the anterior part of the perineum took place." 3d, Continuing the account of intern injuries, I quote the paragraph on *Perineal Injuries*.—"Our observations," it is said, "on perineal injuries among intern cases gave the following results:—In 14 of the 31 primiparæ the perineal body was more or less lacerated, in 6 of them severely. This gives a proportion for the primiparæ of forty-five per cent. In these we do include lacerations of the vaginal outlet or lesions of the fourchette only. In the 26 multiparæ 4 distinct lacerations of the perineum occurred. In one of these the tear went back an inch, and required to be stitched. In all cases of considerable laceration we sewed the parts together at once with silk-worm gut. These all united satisfactorily except one case, in which union failed completely." It is not stated, however, in how many cases it was thought necessary to "sew the parts together," although it would be satisfactory that this should be known. 4th, Again, to quote from the report on the externs, it is said, "In the persistent occipito-posterior case, as the occiput was passing over and greatly distending the perineum, the uterus contracted suddenly and forcibly, expelling the fetus and the placenta together, and *tearing the entire perineum and sphincter ani*. The laceration further passed up the recto-vaginal septum to the extent of from one and a half to two inches." This case, it is said, was "terminated instrumentally," but it is not said who used the forceps, or what kind of forceps was used, as Dr Macdonald says regarding this case, "In only one case (among the

externs) was a severe case *reported* to me." 5th, I again quote from the report as to the externs:—"In one case, a primipara, a harnatocele formed on the left and posterior aspects of the lower third of the vagina. The cavity became putrid, and its contents worked their way into the vagina by perforating its wall at two places. This process was accompanied by considerable fever, which, however, immediately subsided so soon as the cavity was completely emptied and washed out with a disinfectant solution."

After reading these details as to mothers and children, intern and extern, it must, I think, be allowed that the attendants had a very busy and anxious time of it at the Maternity during the quarter ended April 30, 1880.

Having my pen in hand, I shall now give a few details as to my own practice, and shall also make a few observations on practical lessons which I think may be deduced from it. I think it right to say now, as I have said on former occasions, that my list of cases includes only those in which the children were viable, and where the case was under my own care from the commencement. Cases of consultation with and assistance to brother practitioners and to midwives are therefore omitted; and I may mention, in regard to the latter, that I have had a good deal to do in giving them assistance, as my object has of late years been as much as possible to withdraw from obstetric practice at a distance. I have therefore got stationed in collieries, with which I have long been connected, several well-instructed females, who take a great part of the ordinary midwifery practice off my hands. In consequence of this, and from my wish that my younger brethren should relieve me of some of the burdens of night-work and attendance upon ordinary cases, I have only a small addition to make to my series of cases already published. The last list I furnished was given in the *London Obstetrical Journal* for June 1878, and was made up to May 1st of that year. The general summary is as follows:—1st, Children—1371 successive births, with 3 deaths, 2 of which occurred when the forceps were used, and 1 when the breech presented. In these 1371 cases the forceps were used 190 times, with, as stated, 2 fetal deaths. Deducting the forceps cases from the others, there are left 1181 miscellaneous cases, with 1 death in a breech presentation.

The maternal deaths in the 190 forceps cases were 5; but I have said that in reality one of these died from disease of the heart, and another from asthma.

To the above I have now to add the results of my obstetrical practice from May 1, 1878, to August 1, 1880. They are the following:—Children, 40; all born alive and did well; forceps used 12 times, mothers in which all did well. Combining the two sets of cases, we have thus, as regards the children, 1411 born, with three deaths; or 202 forceps cases with 2 deaths, and 1209 miscellaneous cases with 1 death.

I have said, in the paper in the *Obstetrical Journal* referred to, that the "maternal deaths form a most fallacious test of a good practice, and that it is a good rule to follow that, *ceteris paribus*, safety to the child implies safety to the mother;" and my maternal mortality since May 1878 illustrates this, for of the 40 mothers 3 died. Unfortunately, a slight puerperal epidemic has prevailed in this district since my last report. All of the labours, I may say, were perfectly easy and natural, and in one of them the child was born before I arrived, and both mother and child were attended to by the nurse.

Each of these three cases presents points of considerable interest, but it is foreign to my present purpose to consider them particularly. I may, however, say that only one was a case of pure rapid puerperal fever or septicaemia, and that it occurred in a detached house in which there had been on former occasions four deaths from diphtheria. In another of these the patient had been, for some months before delivery, suffering from well-marked attacks of ague, and these became greatly aggravated *immediately* after delivery, apparently combining with, or producing, a depraved puerperal condition, and proving fatal in about three weeks. In the third case the patient recovered slowly after the labour, and went about from four to five months, when an exhausting remittent fever *returned* and proved fatal. In none of the three cases was any local pain complained of.

Besides the 40 children referred to, a number of premature cases occurred during the same period, and 1 child, about full time, was putrid. In 1 case an arm presented, and in this patient's previous labour there was a dead monstrosity. The ratio in which the forceps were used in this small series, nearly in every third case, is greater than in any of the other series I have given. I rather think that this was accidental, for I had not the slightest wish to resort to instrumental aid if safety to the child would have allowed it to be dispensed with, and the number is so small that I have little doubt, had it been greater, it would have been corrected, as, indeed, I have noticed before in making up my statistics. The true ratio in such a practice as my own will range, I think, as I have formerly given it, from about 5 to 7; and this I state occurs as a *necessity*, and not as a matter of choice, *if the other rules I have laid down be followed*. This has hardly been attended to in the discussions which have taken place on my practice, and I shall immediately have a little more to say about it.

"Well," I think I can hear many a young man saying, "your practice seems to have been extremely successful; tell us how you have managed to make it so." To which I might reply, "Gentlemen, you are not well up in the literature of this department of your profession, or you would have known that already; but, as I would like well enough to remove some of the perplexities that always attend the early years of a surgeon's practice, and perhaps

add a few thousands annually to our population, if my directions are followed, we will just have a little chat as to the way I almost invariably manage my cases."

The first thing that strikes me, in looking back to the early years of my obstetrical practice and comparing it with the present time, is its great simplicity now as compared with then. In one of our discussions at the Edinburgh Obstetrical Society, I remember Dr Keiller called it a "bold" practice; but my own feeling has been that its chief characteristic now is its simplicity, and really its principal boldness often seems to me to have consisted most in sweeping "a lot of rubbish" out of way,—enemata, sometimes soothing, sometimes stimulating; supports to the feet and pillows between the knees; antimony, belladonna, bleeding¹ to relax a rigid os uteri; ergot, as a matter of course, to give strength to the pains; chloroform to make the patient oblivious and comfortable; introducing the catheter before the forceps were applied, to make sure that the bladder was not injured; greasing the blades of the forceps before introducing them, and tying their handles together after they were introduced, to fix them,—and its simplicity, I think, has been brought about chiefly from my gradually getting to know exactly what has to be done, and when, and how, and with what to do it. I have illustrated this on former occasions by saying that its negations are almost as important as the positive changes that I have introduced into it, and I am sorry to see that one, as it appears to me, of the most important of these negations is in danger of being interfered with at the present time, chiefly from the example of Dr Johnston in Dublin, as it was formerly from the teaching of Professor Hamilton in Edinburgh. I allude here, of course, to the use of the forceps in the first stage of labour by Dr Johnston, and to Professor Hamilton's rule that the length of the labour should not be allowed to exceed twelve or fourteen hours,² my own rule having been for many years that the first stage of labour should not be interfered with at all, if possible, and except in certain great emergencies,—that in the early stages of

¹ I feel astounded when I recollect that during my student life I once (I think only once) took a plateful or two of good blood from a woman for this purpose, and it strikes me that I was considered to be a very active and clever fellow in doing so, as I had a great run of cases just then.

² I am afraid there are few alive now who can recollect the energy with which the kindly old Professor used to descend on this subject, and the earnestness with which he used to insist, year after year, that if his rule had been attended to the life of the Princess Charlotte would have been saved. Of course this was a reflection on the practice of poor Sir Richard Croft, who, after the sad catastrophe, committed suicide; and I have learned only lately, from reading the biography of George Crambe, that an action of damages was commenced by Sir Richard against the Professor for the free comments he had made. After all, it has been found, as is now well known, that the Professor was wrong. The child, no doubt, lost its life from the labour having been protracted, and from the forceps not having been used; but the Princess lost her life from flooding, a pound of blood having been found in the uterus after death.

labour, in fact, nature does much better than we can do the necessary work, if we will just have patience; and also that we can afford to do so without much risk, for that until the commencement of the second stage the danger to mother and child is not generally great. No doubt, the length, and especially the severity, of the first stage must always be taken into account, and the rest of the labour treated in accordance with these; but, as a general rule, non-interference with the first stage, to as great an extent as possible, seems to me a sound one.

On a former occasion I said that it seemed to me almost worthy to be held as axiomatic that, in labour, danger to the mother will increase in the ratio in which the forceps have to be, or rather are, introduced *within* the uterus, even when the os is well dilated; and this was very forcibly brought out during the recent discussion on the subject in the London Obstetrical Society. In the *Medical Times and Gazette* for August 1879 it is remarked by the editor, that when the practice at the Rotunda of Collins (who used the forceps only once in 608 deliveries) is compared with Johnston's, who (often before the os was dilated) used them once in 10 deliveries, the maternal mortality has been more than doubled, while the foetal mortality was also increased. On these statistics I would make two remarks: 1st, as I have said already, there may be great fallacy in comparing maternal mortalities at all, from the erratic outbreaks of puerperal fever; and 2d, in this case I would say we are only comparing one bad practice with another bad one, which at most can give us only very unsatisfactory results. The discussion, however, has been a most valuable one, and the tendencies have mostly, I think, been in the right direction. It is to be hoped that it will, at any rate in this country, give the *coup de grace* to frequent instrumental interference with labour in its first stage, though I almost got afraid for a time that Dr Johnston's high position and example were going to make it "fashionable." Whether it survive in this country or not, however, it does not yet seem dead in "the States," for, through the politeness of Professor Taylor of New York, I have lately received from him a reprint from the 4th vol. of the *New York Gynecological Transactions*, in which the same practice is still advocated, and in which a drawing is given of forceps 16 inches long, and with blades only $1\frac{1}{2}$ inch broad, which can, the Professor states, be introduced through a very small os uteri. Of this practice I have no experience; and as at present I am using my pen chiefly for the benefit of the younger members of the profession, I think I need say nothing further regarding it, as all confess at least that the practice is a difficult one. My forceps are $13\frac{3}{4}$ inches long, and the blades $1\frac{3}{4}$ inch broad, and I have always as yet found them to answer the purpose required most admirably. They are straight, and I therefore never get confused in thinking of possible injuries to the mother; and

when the head is at the brim I throw the handles back towards the perineum to enable me to lay hold of it: in doing this I am not particular in what direction the instrument catches the child, for I have never known my forceps injurious, even when placed over the face. When they do catch, I use gentle traction with one hand, at the same time that I push the uterus up over the head with the other, until I am able to touch an ear, and then I usually find that all is simple and safe.

I generally, therefore, it will be seen, remain idle or "escape" during the continuance of the first stage of labour; but from the commencement of the second stage, on the contrary, I am pretty active. As I hold this should not continue much more than two hours, I set myself assiduously, wherever the head may be, to get the uterus over it, generally introducing two fingers anteriorly, but often the whole hand, in order to effect this. I am most *persistent and determined on this point*, and I think a good deal of the success of my practice has depended on it. In doing this I generally come to find out exactly "where the shoe pinches,"—whether, for example, the head catches the uterus by pressing it against any prominent part of the pelvis, and whether this has to be got rid of and the prominence avoided, should the forceps subsequently be required. I come to know in this way, in fact, exactly what I have to do.

(To be continued.)

Part Second.

REVIEWS.

The Care of the Insane, and their Legal Control. By JOHN CHARLES BUCKNILL, M.D., F.R.S.E. London: Macmillan & Co.: 1880.

Insanity and the Lunacy Law. By WILLIAM WOOD, M.D., F.R.C.P., etc. London: J. & A. Churchill: 1879.

A Few Remarks upon Proposed Lunacy Legislation. London: Simpkin, Marshall, & Co.

THESE three pamphlets are all written with the view to influence our legislators in making new laws about the care and custody of lunatics, and as the legislators know little of the matter with which they are to deal, the temptation to offer them advice is very strong. We only hope they will listen to it; and indeed, if we were sure of the reader's patience, we might ourselves go on adding page after page of suggested legislation.

Of the three treatises before us, Dr Bucknill's is much the longest, comprising 153 pages of post octavo. We have here the articles reviewed and enlarged, which appeared during the course of the

year 1879 in the *British Medical Journal*. As the author possesses a vigorous style and an undeniable knowledge of the subject, it is not at all surprising that his attacks upon private lunatic asylums should have excited opposition. As we never had any connexion with private asylums, we need not hesitate to say that, in the recent attacks made against them, the proprietors of these establishments have been most unfairly treated. The stock argument against them is, that the temptation is very strong, in one who derives a profit from the detention of a lunatic, to continue this detention after he has recovered. This argument, of course, will apply to the practising physician and surgeon who may be tempted to arrange to put off the recovery of a wealthy patient, or to keep him alarmed about the state of his health after the danger had really passed away. As Dr Wood puts it, "the duration of the period of convalescence must always be uncertain, and the uncertainty which prevails as to the time when it is prudent to relinquish control is not an imaginary, but a real difficulty. Many patients fall back into an insane state more hopeless than their original condition, in consequence of the incautious withdrawal of all control when its prolonged continuance would probably have ensured complete recovery. Unworthy motives are not attributed to the surgeon who prolongs his attendance on a patient who has broken his leg, and who thinks it his duty to watch and guard against imprudent and premature use of the limb though the bone has united."

Dr Bucknill's reply to this is scarcely worth quoting. "Without commenting," he writes, "upon this justification of one of the peccadilloes of private lunatic asylums, the detention of patients after their apparent recovery, it must be observed that any surgeon who did act in the manner supposed would most certainly have unworthy motives attributed to him. Only, to make the analogy fit the case, this surgical patient must be put in such a condition that he can in no way help himself, and he must also be supposed to be incapable of saying to the surgeon that he had had enough of him, and also it should be assumed of him that his surgeon was paid by a third party, whose interest it might be that the bone should not speedily unite—of a child away from its parents, for instance, lying at an hotel." The assumption that Dr Wood admits that private lunatic asylums actually detain their patients longer than they ought is scarcely worthy of so powerful a controversialist as Dr Bucknill, and most of our readers will see that Dr Wood means that a prudent surgeon always leaves a margin of time, to insure that osseous union and repair are quite complete before he will let his patient go freely about. No physician of an asylum, whether a proprietor or a salaried superintendent, ever dreams of letting a patient go the moment he commences talking rationally. He requires a certain margin of time ere he can be assured that the change is only temporary, and that the patient can stand the tear and wear of the outer world, and in this sense there are always a large

number of sane men actually detained in asylums. Surely it is a reasonable way of viewing the subject if, instead of statingspeculative temptations to which the honour of the proprietor of the asylum is bound to succumb, one were to inquire whether there is any evidence that these sorely tried individuals actually resist the temptation; and after looking over the heavy mass of the evidence taken before the Dillwyn Committee, it appears that there is not a single instance proved of unjust or illegal detention of a lunatic in a private asylum.

After such an honourable testimony to the uncorruptible integrity of proprietors of private asylums, we may ask, Have these establishments no compensating advantages over the public asylums?

There seems some plausibility in what is advanced by the author of the pamphlet on proposed lunacy legislation:—"We maintain that, with few exceptions, a private asylum is more an hospital for individual treatment than a public asylum, and must necessarily be so from the above fact, viz., that the patients as a rule receive more of the special care and attention which it is the interest and desire of the medical proprietor to give them." Such is also the view taken by Dr Wood:—"Whatever other advantages there may be in a public asylum, there cannot be the same means of providing the comforts of a domestic circle as exist in a private establishment, especially where the proprietor and his family devote their lives to the service of their patients and live among them. One would suppose that this is an advantage more than equivalent to the possible danger of a patient being kept under control somewhat longer than some might think necessary."

We do not know much of private asylums, but we can subscribe to the truth of the following passage, taken from Dr Bucknill's little book, which may be said in general to hold true of the asylums in proportion to their size:—"Narcotics and sedatives are used with more or less audacity now, as depressing medicines were used a generation ago; but the persistent efforts to relieve, by medicine, those bolily conditions upon which the morbid mental states depend, which were practised in asylums within even recent memory, have now gone out of vogue, and even the belief in them seems to be dead and gone. In many of the asylums now a patient may get well if he will under good hygienic influences; but as for any systematic attempts to aid nature by the resources of the medical art—except those in a few well-known institutions where the love of medical science survives—one would almost as soon expect to see them made as to meet with the older practices of mechanical restraint. Indeed, it is not certain that to blister a patient's head in the hope of saving him from dementia would now be thought a cruelty. But in the treatment of single cases by any capable and conscientious physician it is quite different. Treatment is the physician's *raison d'être*, and even mad patients are very frequently intelligent enough to know whether efforts are or are not being made for their benefit."

Dr Bucknill favours the treatment of the insane in houses where there are no more than three or four boarders together. He observes that, the smaller the asylum the less the objection to it, and that the system "which compasses the herding together of lunatics of large fortune, or even of competent means, for any purpose but the important one of public safety, is but a mouldy method of routine and prejudice." He says that he can point to the single patient system, as carried out under the authority of the Lord Chancellor, with untold blessing to the great majority of those who have tried it; but the Commissioners are averse to the multiplication of houses licensed for three or four patients on account of the great waste of public time in the visitation which they entail.

Dr Bucknill, then, approves of private asylums as long as they remain very small, but he would, we suppose, object to a man who had successfully treated four boarders being allowed to go on increasing the number of his patients. The perennial danger and trouble in public asylums is the committee of managers, too often men jealous of their power, but incapable of intelligently exercising it. Now the proprietor of an asylum can go straight to his object and do at once what he thinks best.

There are many other subjects discussed in Dr Bucknill's book, to which he brings all his ripe experience, his discursive intellect, and his vivid style. Those interested in the care of the insane will find it both amusing and instructive reading.

Pharmacology and Therapeutics; or, Medicine Past and Present.

By T. LAUDER BRUNTON, M.D., F.R.S., Assistant Physician and Lecturer on Materia Medica and Therapeutics at St Bartholomew's Hospital. London: Macmillan & Co.: 1880.

THIS work consists of the Goulstonian Lectures delivered before the Royal College of Physicians in the spring of 1877.

The author tells us in the preface that "the object of the lectures was to show how the progress of therapeutics is aided by an exact knowledge of the action of drugs obtained by experiments." In this laudable object Dr Brunton has been eminently successful. The lectures are worthy of the distinguished position which the author has attained as an original investigator in this branch of medical science.

The book is divided into twelve chapters—1. Medicine Past and Present; 2 and 3. Progress of Medicine in the Past; 4. Rational and Scientific Medicine; 5. History and Methods of Pharmacology; 6. Pharmacological Methods; 7. Pathology; 8. Therapeutics; 9. Respiration; 10 and 11. Digestion; 12. Action of Ferments or Enzymes in forming Tissues.

The whole book, including an excellent index, only occupies 212 pages, and well illustrates how much valuable information may

be conveyed in few words. Every chapter of the book is well written, and no higher compliment can be paid this work than to say it is worthy of its author. We trust the book will have a wide circulation, and be not only carefully read and studied by all students, but also by all medical practitioners.

The Past in the Present: What is Civilisation? By ARTHUR MITCHELL, M.D., LL.D. Edinburgh: David Douglas: 1880. Profusely illustrated.

THOUGH this is not a medical work, yet, from the eminence of its author in his own special branch of medical study, and its extreme value and interest, we insert this notice of the book in our pages with the hope that those of our readers who have not seen it may at once purchase and study it.

We believe it is one of the most important contributions of this century, not only to sociology, but also as showing us the true line in which anthropological investigations should be directed, and also the spirit in which deductions should be made and reasoned on.

Full of interesting details of the survival of savage—so-called prehistoric—customs in our own age, almost in our own midst, penetrated by a fine, calm, philosophic spirit, written in pure, nervous Saxon, pellucid in its clearness, free from egotism, mannerism, and self-assertion, it seems to us a model volume. Its only fault is its shortness.

The subjects treated are of special interest to medical men, and, above all others, to practitioners in the wilder country districts, and some of whom may have the pleasure of verifying, and perhaps the still greater pleasure of adding to Dr Mitchell's store of ancient customs, tales, and superstitions.

Part Third.

MEETINGS OF SOCIETIES.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XXXIX.—MEETING XIV.

Wednesday, 14th July.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Dr C. E. Underhill* exhibited a PREGNANT UTERUS AND KIDNEYS taken from a woman who died at the 7th month of utero-

gestation, for which he was indebted to Dr Inglis of Morningside Asylum. The patient, a primipara, aged 27, had been sent to the Asylum on the 5th of July in a state of insanity, which had at first been characterized by sleeplessness, delusions, and great excitement; but when admitted she had sunk into a state of apathy and confusion, from which she had not rallied, but passed to a condition of stupor, and gradually sank. She died on the 14th, and the post-mortem was made on the 15th. At the time of admission she was said to be suffering from retention of urine, but after a warm bath she made water freely, and continued to do so. The cervix was found to contain a clear mucous plug; the fœtus presented by the breech, as was quite clear on external manipulation. One of the kidneys was found nearly twice the natural size, and studded with small yellow spots, apparently minute abscesses. One extremity of it appeared to be almost in a gangrenous condition; but a thorough examination of them would be made. There were no naked-eye changes found in the brain.

II. *The President* showed (1) a FIBROUS POLYPUS which he had removed, by means of the wire ecraseur, from the anterior surface of the cervical canal. The growth had a large nutrient artery, which bled and required ligature. (2) A LABIAL POLYPUS, which he had removed from the vulva of an unmarried lady 35 years of age. It had existed for ten years, and was liable to get swollen and inflamed. Through a feeling of modesty the lady had borne the discomfort for that time. It was easily removed, and without bleeding.

III. *Professor Simpson* showed for Dr Govan, of the Indian Medical Service, two photographs of a woman who suffered from ELEPHANTIASIS OF THE LABIA. She was a native of the Kumaon Hills, Northern India, belonged to the agricultural or labouring class, and had been afflicted with elephantiasis of the labia from childhood. She was 19 or 20 years of age, and both labia had gradually enlarged in size and weight, until the right labium weighed 3 lbs. and the left 4 lbs. For many years previous a copious fetid discharge had taken place from the mucous surfaces, attended with constant fever, which had reduced her to extreme emaciation and prostration of strength. The tumours presented a lobular appearance, and were highly vascular, and, on consultation, excision with the knife was considered impossible, as she would not survive the consequent loss of blood. The patient was kept in bed, with astringent lotions applied for some weeks, while a nourishing diet was administered. An elastic ligature was applied to the right labium, and was tightened every second or third day, until on the thirteenth day it had been completely separated by ulceration, without the loss of a single drop of blood. After a short respite to regain strength, the left labium was similarly ligatured, and was completely separated on the seventeenth day, without any loss of

blood. Opiates were administered during the ulcerative process to allay irritability. Six months after the operation the woman was completely restored to health and strength, and able to work as hard as her neighbours. The cicatrices measured about eight and nine inches respectively.

IV. *The President* then read his paper on TWO CASES OF SEPTICÆMIA, which was begun at p. 207 of this Journal, and continued at p. 301.

Dr Keiller expressed the pleasure with which he had listened to the President's cases. He wished to know if any infectious cases had been left, as when he came on he got some cases which went bad for a time. The symptoms commenced a day or two after labour, and were sent to the Fever Hospital, where they recovered. One fatal case had a history like the President's. The patient was in better circumstances, and had been sent to hospital to be confined as a matter of convenience. Septicæmia set in after labour. Pulse and temperature were high. There was no pelvic distress, and the milk was abundant. Delirium set in, perhaps from the belladonna applied to the breasts, and she died delirious. The President's paper recalled to his recollection a case of septicæmia from placenta retained after abortion, which he had recently seen with one of their Fellows. The history was that the lady aborted in May in the country. There was great flooding, and evidently part of the placenta was left. Since that time she had suffered from occasional floodings, which necessitated the dilatation of the cervix and the removal of the large part of the placenta which remained. He saw her yesterday week, and found her in a very low condition, with white legs and some abdominal distention. He gave a bad prognosis, and this was verified by the death of the patient.

Dr James Carmichael had listened with great interest to the President's paper, especially to the account of the post-mortem in the fatal case. The point of interest in the fatal case was the polypus-like mass on the placental site. He believed it was the duty of maternity physicians to investigate carefully the causes of such cases of septicæmia. He thought that infection might be conveyed in a Maternity Hospital by using the same vaginal tube for different patients. In practice he had found that some nurses were in the habit of using intra-vaginal injections in natural cases without special orders from the physician. He considered the propriety of such a practice doubtful, and that it might be attended with evil results.

Dr Cromie explained that so far as he knew no maternity physician made a routine practice of vaginal injection. He did not think that infection could be conveyed by a use of vaginal tubes if these were thoroughly soaked, after use, in a strong antiseptic lotion, and if thorough antiseptic precautions were carried out.

Professor Simpson remarked on the interest of the President's two cases. He did not think, however, that they were so parallel as he had asserted. Thus the temperature charts were different—*i.e.*, in the fatal case they had no such rapid indication of mischief as in the other. The pulse rates differed too. In the case of recovery the pulse was seldom dangerous, and there was hardly ever an alarming rise of it. He wished to know if there was any thrombosis of the uterine veins noted in the fatal case. All septic sources should be searched for in such a case. Sir James Simpson had put the whole matter so clearly many years ago that he was astonished systematic writers had been so long in acknowledging the kind of relation between surgical and puerperal fevers, illustrated in Dr M.'s communication. The hæmorrhage during labour, followed by the flaccid state of the uterus during the puerperium, in one of the cases, was important. This was a dangerous condition, and probably it was best not to be in too great a hurry to explore the uterus, but rather to keep it well contracted by ergot.

Dr Lauchlan Aitken said it was now eleven years since he had attended a meeting of this Society. He had come here to-night with the intention of learning, and not of taking any part in this discussion. The two cases given by the President were of great interest, and might have led to results of great importance had a method of research he would speak of shortly been used. It would be of great interest if it could be shown that in septicæmia they had a special agent like that in malaria, splenic fever, etc. As to the source of infection in these cases, it was perfectly evident that in one of them it was due to the introduction of the hand into the uterine cavity and the deposition there of the special organism which was found in the lung infarcti. The original germ was introduced from without. He thought that Dr Macdonald, had it occurred to him, might have performed a very interesting series of experiments in endeavouring to propagate this special organism in gelatine, as had been done in other cases of a similar nature. Such a method of research might have given an organism for puerperal fever, just as they had the *Bacillus malariae*, *Bacillus anthracis*, and so on.

Dr James Ritchie felt indebted to Dr Macdonald for his paper. He wished to point out that the constitutions of patients varied, and therefore the same poison would have different effects on different people. The student who took typhus after a winter's hard reading ran a bad chance of recovery. Often one's puerperal patients do not recover very well. This may be due to a slight poison which may do no harm in a healthy patient, and yet damage a weak person exceedingly.

Dr Hart having made some observations,

The President, in reply, thanked the Fellows for their too com-

plimentary remarks. Professor Simpson's criticisms were just, but he had arrived at his own conclusions after due consideration, including the identical ideas urged by him. The observations on the pulse-rate were also fair, but still the pulse was not so trustworthy a guide as Professor Simpson would seem to indicate. He did not require to remind Dr Simpson that many cases of venous septicæmia had a low pulse-rate throughout even when the attack was virulent. He considered that both cases belonged to the category of venous septicæmia. The connecting points in the two cases were the high temperature and the chest symptoms. Diagnosis, at best, is a matter of comparative opinion, and of course we must often agree to differ regarding it. Only he could say that to himself and those who watched the cases with him, the two seemed so exceedingly alike that he felt compelled to include them under one head. He was obliged to Dr Aitken for his presence and criticism, and would take advantage of germ-cultivation another time. He made no definite statement as to bacteria, as it was as yet not quite proved whether bacteria were themselves poisonous, or any more than nearly, if not quite, invariable accompaniments of septicæmia. He had accordingly of set purpose avoided the subject.

V. *Dr M'Raild* then read his paper on SCARLET FEVER IN THE PUERPERIUM, which appeared at page 224 of this Journal.

Professor Simpson thanked Dr M'Raild for his interesting cases. They were germane to the subject already discussed, and the case in which the child also became affected was of special value.

Dr Bruce remarked that there were two kinds of puerperal scarlatina. In one form there was a scarlet eruption and other symptoms resembling scarlatina, yet it was not the same, and could not reproduce that disease in others. When it is real scarlatina the source of infection can generally be traced, and it may be imparted to the unprotected.

Dr Craig pointed out that Dr M'Raild's case was undoubtedly scarlet fever, as other children took it.

The President thought the first case was undoubtedly scarlet fever. Sometimes the diagnosis was difficult. In one case Dr Simpson saw with him several years ago there was a red congested skin for several days, followed by desquamation, but yet it was not scarlet fever. Olshausen had shown that in puerperal scarlet fever the skin was dry and temperature high, and uterus involutes well. This he could corroborate from cases occurring in his own experience. Sometimes the system was attacked at once by several pathological influences of a malign form. Ten days ago he saw a puerperal patient suffering from scarlet fever, and at the same time from albuminuria and eclampsia.

Dr Wilson mentioned a case of a little girl with suppurating knee who, without obvious exposure to infection, as she had not

been out of bed for some time, had rash, sore throat, and high temperature. He sent the children away, but one brought back prematurely and without his sanction took fever and died.

Dr McRaid thanked the Fellows.

SESSION XXXIX.—MEETING XV.

Wednesday, 21st July 1880.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Professor Simpson* showed (1) a CAULIFLOWER CANCER OF THE CERVIX which he had removed from a patient of Dr Rattray, Portobello, who had kindly drawn up the following account of the case:—

On 12th June 1880 Mrs S., aged 30, consulted me for profuse and continuous discharge of “whites.”

History.—No trace of uterine disease in any of her relations. Patient very fair, and excessively anæmic. Married in July 1875; gave birth to a child at full time, which died at the age of 18 months, of bronchitis and dental irritation. She can't say definitely if she has been again pregnant, but thinks it quite possible, as she had attacks of bleeding, and passed large clots frequently within the year. Patient menstruates regularly, but has been suffering from constant and persistent white discharge since last January. About five months ago she had a severe flooding, which I am inclined to think was a miscarriage; and since then, to use her own words, was never a day dry, or without a napkin. During these five or six months she never consulted a doctor till I saw her on the date already mentioned. The striking fact in this case, of so grave and serious a nature, is that she never could say *she suffered from pain.*

Treatment.—Quin., aromt. sulphuric acid, tr. ferri. mur., glycerine, and water, in mixture, internally. Logwood, zinc, etc., injections. I should state that ergot, guaiacum, etc., made no impression on the whites. As my treatment failed, I examined with the speculum, and detected at once the presence of a large cauliflower excrescence, firmly attached to os uteri all round, and extending partly up the neck of the womb. The least touch induced bleeding. On 15th July Professor Simpson—the patient having been previously anesthetized—proceeded to remove as much as possible of the tumour by means of the ecraseur. After the removal of this instrument and the detached piece of the tumour, it was found that the disease extended higher up the uterus, and also involved the posterior wall of the vagina. Dr Simpson cauterized the raw surface with Paquelin's thermo-cautery, and was careful to avoid doing any damage to the vaginal walls or peritoneum. The vagina was well plugged with cotton wool thoroughly saturated with carbolic oil (1 in 40). On second day I removed the plug and repeated the same treatment. Again to-day I extracted the last plug, and washed out vagina with solution of carbolic acid (1 in 40).

which greatly refreshed our patient. Pulse, temperature, tongue, bowels, etc., normal; feels very well, and enjoys her food.

(2) A number of WARTY GROWTHS he had removed from the external pudenda of a patient. He used Paquelin's thermo-cautery, so that no blood was lost.

(3) THREAD MADE FROM THE SINEWS OF THE OX. He owed the specimen to the kindness of Dr James Dalzell, who informed him that this material was in common use among the Zulus. He (Professor S.) had sometimes thought that the long sinews of some birds might be split up into threads, which might take the place of catgut in surgical practice.

II. *The President* showed a FÆTUS he had removed by craniotomy from a patient suffering from advanced carcinomatous disease of the cervix uteri. The following was the history of the case:—

During the afternoon and evening of July 15 pains were almost absent. In the course of the morning they returned powerfully, and at 8.30 A.M. the waters ruptured. Dr Macdonald was immediately sent for, and arrived about 9.15. A.M. On examination the patient was found to be suffering from severe uterine pain. The uterus was contracting powerfully. *Per vaginam*—The head was found to present and to be entering the pelvis, carrying before it the undilated cancerous cervix. The head could be felt through the lower uterine segment, but not through the os nor cervix. On auscultation no foetal heart could be heard, though it had been well heard previously. The uterine contractions were manifestly excessive, and uterine rupture appeared not improbable unless the patient was relieved speedily; and as the diseased cervix showed no tendency to dilate, it was resolved to proceed to deliver by Cesarean section. Arrangements were accordingly made to perform that operation with Listerian precautions. Before these were completed about an hour passed. After the patient had been chloroformed, as Dr Macdonald did not wish to expose his fingers to the vaginal discharges at the time, Dr Underhill examined, and discovered that an arm had come to present, and that the cervix was yielding somewhat in its posterior part. Dr Macdonald now examined, and confirmed Dr Underhill's observation. With some difficulty he succeeded in passing the hand through the os, and found that the head and shoulder were presenting at the brim—the head towards the left, the breech towards the right. Seizing the left knee, which was reached with some difficulty, he brought down the foot and turned with comparative ease. It was now seen that the child was already beginning to desquamate. There was great resistance to the passage of the body, although the child was specially small. It was difficult to disengage the right shoulder, in consequence of the height at which the head was maintained by the diseased cervix; and whilst the first shoulder was being disengaged the spinal column was observed to snap asunder. As there

was now nothing with which to pull upon the head, it was resolved to extract it with the cephalotribe. Cephalotripsy and craniotomy instruments were accordingly sent for. Several ineffectual attempts were made to fix a Simpson's cephalotribe upon the head (the body had by this time dropped off from the head), efforts being put forth to fix the head by the hook first in the mouth, and then in one of the orbits, but all to no purpose. After Dr Macdonald became exhausted, Dr Underhill tried, but in vain also. Dr Macdonald, having rested, again attempted to grasp the head with the cephalotribe, but unsuccessfully. He now passed the right hand into the uterus as far as possible, and, fixing the head against the anterior wall of the uterus, on which Dr Underhill pressed at the same time through the abdomen, succeeded in introducing the perforator with the left hand through the skull, thus completely emptying the cranium of its contents. The head was gradually lessened by crotchet and craniotomy forceps, and ultimately completely removed. The placenta was now removed, and the uterus and vagina thoroughly washed out with 1 to 40 carbolic acid. There was no bleeding. The patient is doing well. (The improvement continued for several weeks, and the uterus involuted well, but the patient died of exhaustion five weeks afterwards.)

III. *Professor Simpson* then read his paper on AXIS TRACTION FORCEPS, which was begun at p. 245 of this Journal, and continued at p. 289.

Dr W. L. Reil, Glasgow, next demonstrated his forceps, whose chief peculiarity is the possession of a marked perineal curve. He had been greatly pleased with Dr Simpson's paper, and agreed with him in the main, except in the use of the fixation screw. Its action, he thought, was bad and dangerous. If very carefully applied it might do no harm, but generally it was screwed up too tightly. Thus there was undue compression of the head, and therefore danger to the child. The advantages of his own forceps were, (1) they enabled the accoucheur to pull in the right direction; (2) the head, when occipito-posterior, is allowed to rotate; (3) the head is allowed to come down in its own way.

The President had listened with pleasure to the extremely important communication Dr Simpson had just brought before them. Everything relating to the forceps operation had been treated of in a most elaborate and exhaustive manner. He had been specially pleased with the manner in which Dr Simpson had laid down the rules for the employment of forceps or turning in cases where the head was arrested at the brim. In the *justo minor* pelvis, forceps should always be employed; but when the narrowing was mainly in the conjugate, turning was generally preferable. The theory of axis-traction had been very clearly brought out. As to the theoretical objections to the fixation screw, any experience of his was that it was not a practical difficulty in experienced

hands. His objection to Tarnier's forceps was that they were clumsy in construction and too bulky. In one special case where he wished to apply them, and the cervix was not fully dilated, he found it impossible to do so, but succeeded with Sir James Simpson's forceps. Then the heel of Tarnier's forceps was apt to press injuriously against the vagina. The mechanical law was quite clear that the amount of effectual force was as the cosine of the angle of anterior deviation of the axis of traction from the pelvic axis, while the force against the pubis was as the sine of that angle. The theoretical proof against the old forceps was very strong, as it was doubtless nearly impossible in high operations to keep their axis of traction in coincidence with the axis of the pelvic cavity. But the simplicity of their construction and application formed a strong argument in their favour in the great run of moderately difficult cases, when a slight deviation from the pelvic axis was not of much practical importance. On the other hand, both theory and, he felt bound to say, the practical experience of any one who had used an axis-traction instrument, such as Tarnier's, combined to establish their claim as the most safe and effective instruments. But hitherto their clumsiness and complicated construction had formed, in his opinion, an insuperable barrier to their use except in specially difficult cases in hospital or consultation practice. Dr Simpson's modification of Tarnier's instrument, as it reduced the size of the blades, and, indeed, lessened the bulk of the entire instrument, would, he hoped, prove a means of removing to a large extent the undoubted objections that lay in the way of the general adoption of Tarnier's forceps.

Dr Bruce felt indebted to Dr Simpson for his paper. The principle in Tarnier's forceps was good, especially in difficult cases. He himself generally used Simpson's short forceps, as they were very handy and answered every purpose in the great majority of instances. Still in some cases where the head is high up, and a great amount of traction required, these are inapplicable, and forceps such as recommended by Professor Simpson would prove of great value.

Dr Gordon thought accoucheurs would ultimately come back to the straight forceps.

Dr T. R. Donaldson, when he heard of Tarnier's forceps, was convinced that their principle was right. He thought the weak point was the fixation screw, and was glad when he heard it could be relaxed during a pain. He thought Simpson's modified forceps could be applied and used when the patient was in the ordinary lateral position, and thus with less fuss.

After some remarks from Dr McRaid and Dr Ritchie,

Dr Simpson thanked the Fellows for their reception of his paper. With his forceps there could be no undue compression of the head. The pressure should be made equal to that exercised by the walls of the pelvis. His objection to Dr Reid's forceps was that they had no indicator of the line of pull. The day of the straight forceps was gone, and would never return.

1880.

ADDRESS TO STUDENTS OF MEDICINE.

FOR some years past we have addressed a few words in our October number to students of medicine entering upon a new winter session. On former occasions we have had in view those mainly who are about to commence their studies; on this we shall think almost exclusively of men who have nearly completed them, and are therefore forming, or at least ventilating, their future plans. A few thoughts on *specialism* may not be out of place. When this word is used with reference to the practice of medicine or surgery, it means that the individual to whom it is applicable restricts himself in great measure, if not entirely, to a limited portion of the great field covered by these sciences. A man who devotes himself to diseases of the chest is a specialist; a surgeon who is almost exclusively occupied with syphilitic affections is a specialist; and the same is true of ophthalmologists, aurists, and others who decline the treatment of maladies or accidents affecting the human frame in general.

With this definition of the term, let us now consider specialism under these heads: its origin; its advantages; its disadvantages.

1. *Its Origin.*

Let us, under this head, make an introductory remark. We are concerned here with an honourable profession, the members of which are educated gentlemen, and who purpose, with God's help, to demean themselves through life in a manner worthy of their antecedents and their upbringing. The specialism we are about to speak of may exist, therefore, consistently with the conditions assumed; but there are specialists who either possess no legal qualification to practise medicine and surgery,—being consciously quacks, charlatans from the outset,—or, having lapsed in the social scale, and being tempted by a thirst for gain or notoriety, adopt unworthy modes of attaining these objects. Some specialists of this description, although essentially rogues, are clever rogues, and possess qualities of mind and manner which promote their success, and which might be advantageously cultivated by many physicians and surgeons who lack such characteristics, and yet are fully equipped with all valuable and reputable qualifications for the practice of our profession. Let it be understood, then, that we are not going to speak of any specialists but those who have been duly educated and behave themselves as gentlemen, although under our third head we may have occasion to show that there are dangers in the practice of specialism, even of the right sort, which those who adopt it will need to guard against.

All the young men who resort to this great school receive, speaking broadly, the same medical education, and then their license

to practise the profession. How do any of these become specialists? What are the circumstances which determine their choice?

The field occupied by medicine and surgery, including gynecology, is so extensive—and every year becoming greater—that there is almost a necessity for certain portions of the field being occupied by those who feel themselves peculiarly attracted by them, or peculiarly fitted, either by natural gifts or by opportunities, for cultivating them with success. The principle of the division of labour reasonably asserts itself. A man whose time is fully occupied with the duties of general practice cannot master the details of a subject so large, so closely associated with other branches of science, and yet so delicate and precise, as modern ophthalmology; and therefore every large town seems to need the presence of one or more men who have devoted themselves more specially than their neighbours to that department. The same remark is applicable to several other groups of diseases, although there is some risk of the specialties being unduly multiplied—unless at the seats of large medical schools; and even there a wise supervision is needed for the sake both of students and of patients.

A young practitioner, then, in consequence of the apparent necessities of his place of residence, or from a conviction that this or that specialty will suit his own qualifications and peculiar bent, may determine to devote himself to it. This is probably the more common origin of specialism in a town or a neighbourhood. And, of course, time will show whether or not the individual has acted wisely. The specialism, however, often takes its rise in a more promising and satisfactory way. The practitioner is found to possess exceptional attainments and to command exceptional success in a certain department of the profession. Such cases consult him because he has already acquired a reputation for the treatment of them. They consult him in such numbers that his time for the ordinary routine of practice becomes very limited; his experience in the particular line indicated rapidly increases; and so, in spite of himself, specialism—at least a modified specialism—becomes a necessity. It is forced upon him by circumstances. This, to our mind, is the best mode in which specialism can arise, and for this reason, that the individual, educated all round in his profession, and actually practising it, has exhibited a special aptitude of whose presence skill and success have given satisfactory evidence. We do not say that a man cannot safely resolve, from the beginning, to adopt any specialism, because circumstances vary exceedingly as to personal and local conditions; but we are strongly of opinion that, as a rule, time and patient consideration should have some scope before the final decision is made.

2. *Its Advantages.*

There can be no doubt that improvements either in the science or the art of our profession, both medical and surgical, may be

expected, *cæteris paribus*, to proceed from those who restrict themselves to particular departments, for two reasons. The first is, that their minds are directed to a smaller field, and may be reasonably expected to discover what improvements are needed; the second is, that their opportunities for observation and for the application of new methods being unusually large, the probability of something new turning up must be necessarily increased. I used the qualification *cæteris paribus*, because it is doubtless true that the eye of genius has often lighted upon discoveries and inventions which had eluded those who, from their devotion to a limited field, might have been expected to see them first. Still it must be obvious that, besides this likelihood of improvements resulting from the cultivation of a specialism, there is the additional advantage to be looked for, that the handicraft part of it, if such there be, will come to be performed with the nicety and precision of habit. "Practice makes perfect" is as applicable to surgical as to all other kinds of manipulation.

3. *Its Disadvantages.*

Among the foremost of these may be mentioned its inevitable tendency, when extreme, to narrow the mental horizon in more ways than one. When a physician or surgeon is habitually occupied with a limited class of human ailments, there is a risk—ever increasing—that instead of taking a comprehensive view of the bodily and mental condition of his patients, with the numberless actions and reactions of the various bodily organs, mental faculties, and moral sentiments, he may confine his attention to the local malady for which his advice is asked. I do not say that this is an inevitable result; but it is one which specialists will need to guard themselves against with a constant sense of danger. The chances are against them, not only because they will be tempted to it by the actual circumstances of the case, but also because their thoughts are not familiar with the various questions which daily occupy the minds of men immersed in the anxieties of general practice.

There are men, and always have been, who, alive to this narrowing tendency, strive manfully against its influence, and with openness of mind and an eye to all the advancements which are continually taking place in all the sciences that bear upon the practice of medicine and surgery, cultivate their own department, and at the same time keep abreast of their brethren as members of an enlightened and honourable profession.

There is no disguising the fact, however, that if a specialist happens to have in him a natural tendency towards quackery, he is in great danger of imitating those men already referred to, who are quacks from the beginning of their career. This is no imaginary case. We have known and heard of men of real ability, high professional attainments, and very successful in life, who, seduced apparently by laziness and vanity, affected eccentricity in their later years, and treated all their cases in the same way; so that

even those who consulted them could pretty accurately anticipate the nature and issue of the so-called consultation. We admit that such cases are exceptional, and are only to be satisfactorily accounted for by the circumstance that the empirical element pre-existed in their mental constitution.

We cannot draw these observations to a close without reminding our young readers that they have chosen an honourable profession—perhaps the most honourable to which any man can aspire. It gives ample scope for every faculty of our intellectual and moral nature. It admits of being carried on irrespective of all local surroundings. The accomplished medical man carries his skill with him, his power to heal or relieve his fellow-men, whithersoever he goes by land or sea, in peace or war, in civilized communities or in the unexplored fields of heathendom. Wherever a human being is found whom his skill can reach and help, he has an opportunity of gratifying the best feelings of his heart, and, at the same time, of imitating Him who, during His life on earth, went about continually doing good. Here we are furnished with a reason for making good the assertion already hazarded, that the healing art takes precedence of all other human occupations. The clerical profession may occur to most minds as pre-eminent; but it is manifestly unable to cope with those disorders, bodily and even mental, to which our human flesh is heir, while, on the other hand, there is nothing to hinder the medical man who does possess that power, to minister also, if he is at once religious and earnest, to the spiritual wants of his patients. Who, we would ask, gains and possesses the confidence of the dying man so thoroughly and rightfully as he who with skill and sympathetic tenderness has been attending to his bodily injuries and sufferings? We do not say that this possibility is actually realized so frequently, so systematically as it ought to be, even by those who acknowledge it; but we hesitate not to aver that it exists, and even now may be seen in ample development, both in our own crowded cities and in many remote missionary fields. We venture to predict that the time is coming, and not far off, when many young surgeons, whose principles, no less than a desire for active foreign enterprise, lead them in that direction, will vindicate the opinion we have expressed as to the supreme nobility and pre-eminence of our profession, by devoting their powers and attainments to that sacred cause.

INFORMATION REGARDING MEDICAL EDUCATION AND EXAMINATIONS.

THE following are the Regulations of the General Medical Council for the Registration of Medical Students:—

I.—PRELIMINARY EXAMINATIONS.

1. That no person be allowed to be registered as a Medical Student unless he shall have previously passed a Preliminary Examination in the subjects of General Education as hereinafter provided.

2. That it be delegated to the Executive Committee to prepare Annually and lay before the Council for Recognition a List of Examining Bodies, whose Examinations fulfil the conditions of the Medical Council as regards General Education.

3. That, for the present, Testimonials of Proficiency granted by Educational Bodies, according to the subjoined list, be accepted, the Council reserving the right to add to, or take from, the list.

N.B.—A Degree in Arts of any University of the United Kingdom or of the Colonies, or of such other Universities as may be specially recognised from time to time by the Medical Council, is considered a sufficient Testimonial of Proficiency.

List of Examining Bodies whose Examinations fulfil the Conditions of the Medical Council, as regards Preliminary Education.

(1.) UNIVERSITIES OF THE UNITED KINGDOM.

Oxford.—Examination for a Degree in Arts. Responsions, Moderations, Local Examinations (Senior), Certificate to include Latin and Mathematics. Local Examinations (Junior), Certificate to include Latin and Mathematics, and also one of the following optional subjects:—Greek; French; German; Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.

Cambridge.—Examination for a Degree in Arts. Previous Examination. Local Examinations (Senior), Certificate to include Latin and Mathematics. Local Examinations (Junior), Certificate to include Latin and Mathematics, and also one of the following optional subjects:—Greek; French; German; Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics. Higher Local Examinations.

Durham.—Examination for a Degree in Arts. Examination for Students in their second and first years. Registration Examination for Medical Students. Local Examinations (Senior), Certificate to include Latin and Mathematics. Local Examinations (Junior), Certificate to include Latin and Mathematics, and also one of the following optional subjects:—Greek; French; German; Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.

Oxford and Cambridge Schools' Examination Board.—¹Certificate to include English Language, including Grammar and Composition; Arithmetic, including Vulgar and Decimal Fractions; Algebra, including Simple Equations; Geometry, First two books of Euclid; Latin, including Translation and Grammar; and one of the following optional subjects:—Greek, French, German, Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.

London.—Examination for a Degree in Arts. Matriculation Examination.

Aberdeen, Edinburgh, Glasgow, and St Andrews.—Examination for a Degree in Arts. Preliminary Examination for Graduation in Medicine or Surgery.

Edinburgh, Aberdeen, and St Andrews.—Examination of (Senior) Candidates for Honorary Certificates under the Local Examinations of these Universities.

Dublin.—Examination for a Degree in Arts. Entrance Examination.

Queen's University (Ireland).—Examination for a Degree in Arts. Entrance Examination. Examination for the Diploma of Licentiate in Arts. Previous Examination for B.A. Degree. Local Examinations, including all the subjects required. Oxford and Cambridge Schools' Examination Board: Certificate, including all the subjects required.

(2.) OTHER BODIES NAMED IN SCHEDULE (A) TO THE MEDICAL ACT.

Royal College of Surgeons of England.—Examination conducted under the

¹ The *English* is provided for by the following *Resolution* of the Executive Committee, passed 27th October 1876:—

"That, as every Candidate for the Certificate of the Oxford and Cambridge Schools' Examination Board is required to answer questions in such a manner as to satisfy the Examiners that he has an adequate knowledge of English Grammar and Orthography, this shall be held as conforming to the requirements of the Medical Council in reference to English Language."

Superintendence of the College of Surgeons, by the Board of Examiners of the Royal College of Preceptors.

The Society of Apothecaries of London.—Examination in Arts.

Royal Colleges of Physicians and Surgeons, Edinburgh.—Preliminary Examination in General Education, conducted by a Board appointed by these two Colleges combined.

Faculty of Physicians and Surgeons of Glasgow.—Preliminary Examination in General Literature.

Royal College of Surgeons in Ireland.—Preliminary Examination, Certificate to include all the subjects required.

Apothecaries' Hall of Ireland.—Preliminary Examination in General Education.

(3.) EXAMINING BODIES IN THE UNITED KINGDOM NOT INCLUDED IN SCHEDULE (A) TO THE MEDICAL ACT.

Royal College of Preceptors.—Examination for a First Class Certificate.

The Examiners for Commissions and Appointments in Her Majesty's Service, Military, Naval, and Civil.—Certificate to include all the subjects required by the General Medical Council.

(4.) INDIAN, COLONIAL, AND FOREIGN UNIVERSITIES AND COLLEGES.

Universities of Calcutta, Madras, and Bombay.—Entrance Examination, Certificate to include Latin.

McGill College, and Bishop's College, Montreal.—Matriculation Examination.

University of Toronto, Trinity College, Toronto, Queen's College, Kingston, and Victoria College, Upper Canada.—Matriculation Examination.

University of Manitoba.—Previous Examinations.

King's College, Nova Scotia.—Matriculation Examination. Responsions.

Medical College, Halifax, Nova Scotia.—Matriculation Examination.

University of Fredericton, New Brunswick.—Matriculation Examination.

University of Melbourne.—Matriculation Examination, Certificate to include all the subjects required by the General Medical Council.

University of Sydney.—Matriculation Examination.

University of the Cape of Good Hope.—Matriculation Examination.

University of Adelaide.—Matriculation Examination. Primary Examination.

Codrington College, Barbadoes.—1. English Certificate for Students of two years' standing, specifying the subjects of Examination. 2. Latin Certificate, or "Testamur."

Tasmanian Council of Education.—Examination for the Degree of Associate of Arts, Certificate to include Latin and Mathematics.

Christ's Church College, Canterbury, New Zealand.—Voluntary Examinations, Certificate to include all the subjects required by the General Medical Council.

South Australia.—*South Australian Institute, Adelaide.*—Preliminary General Examination: First Class Certificate.

4. That it be recommended to the Licensing Boards not to accept the Certificate of Proficiency in General (preliminary) Education from any of the Bodies, the names of which are contained in the list annually circulated, unless such Certificate testify that the Student to whom it has been granted has been examined in the following subjects:—1. English Language, including Grammar and Composition.¹ 2. Arithmetic, including Vulgar and Decimal Fractions. Algebra, including Simple Equations. 3. Geometry—First two books of Euclid, or the subjects thereof. 4. Latin, including Translation and Grammar.

¹ The General Medical Council will not consider any Examination in English sufficient that does not fully test the ability of the candidate,—1st, To write a few sentences in correct English on a given theme, attention being paid to spelling and punctuation as well as to composition. 2d, To write a portion of an English author to dictation. 3d, To explain the grammatical construction of one or two sentences. 4th, To point out the grammatical errors in a sentence ungrammatically composed, and to explain their nature. 5th, To give the derivation and definition of a few English words in common use.

Provided always, that an Examination may be accepted as satisfactory that secures, on the part of the Candidate passing it, a sufficient grammatical knowledge of English.

And in one of the following optional subjects:—Greek. French. German. Elementary Mechanics of solids and fluids, meaning thereby Mechanics, Hydrostatics, Pneumatics, and Hydraulics.

II.—REGISTRATION OF MEDICAL STUDENTS.

7. Every Medical Student shall be registered in the manner hereinafter prescribed by the General Medical Council.

8. No Medical Student shall be registered until he has passed a Preliminary Examination, as required by the General Medical Council, and has produced evidence that he has commenced Medical Study.

9. The commencement of the course of Professional Study recognised by any of the Qualifying Bodies, shall not be reckoned as dating earlier than fifteen days before the date of Registration.

10. The Registration of Medical Students shall be placed under the charge of the Branch Registrars.

11. Each of the Branch Registrars shall keep a Register of Medical Students according to the subjoined Form:—

Form for the Registration of Medical Students.

Date of Registration.	NAME.	Preliminary Examination and Date.	Place and Date of Commencement of Medical Study, as certified by a Master, Teacher, or Official in a Medical School or Hospital.

12. Every person desirous of being registered as a Medical Student shall apply to the Branch Registrar of the division of the United Kingdom in which he is residing, according to the annexed Form, which may be had on application to the several Qualifying Bodies, Medical Schools, and Hospitals; and shall produce or forward to the Branch Registrar a Certificate of his having passed a Preliminary Examination, as required by the General Medical Council, and evidence that he has commenced Medical Study.

The following pages contain a tabular abstract of the regulations of the various Licensing Boards, as well as a list of the Hospitals, Dispensaries, etc., attached to our Scotch Medical Schools; also the regulations for the Army, Indian, and Navy Medical Services. The space at our disposal does not allow of more detailed information. But, in point of fact, the regulations of all Licensing Boards now correspond much more closely than they used to do, and the regulations of the General Medical Council afford a key to the general requirements of all of them. For special information, application should always be made to the Secretaries of the Licensing Boards; or, in the case of the Universities, recourse may be had to the published Calendars.

The Preliminary Examinations are usually held before the commencement, and at the end, of the Winter Session,—viz., in October, March, or April—sometimes also at the end of the Summer Session. The Professional Examinations in Universities are usually after the Winter and during the Summer Sessions; in Edinburgh, however, the first Professional is held in October as well as April. The other Licensing Boards' examinations are held at various periods throughout the year. Special examinations, under circumstances of urgency, can be held at almost any time; but they, of course, entail considerable addition to the expense.

COURSE OF STUDY REQUIRED BY THE VARIOUS BOARDS OF THE UNITED KINGDOM.

	Age.	Anatomy.		Dissections.	Chemistry.		Practical Chemistry.		Medical Metaph.		Physiology or Insti- tutes of Medicine.		Surgery.		Practice of Medicine.		Midwifery.		Medical Jurispru- dence.		Botany.		Natural History.		Practical Pharmacy.		Clinical Surgery.		Clinical Medicine.		Hospital Attendance.		Practical Midwifery.		Dispensary or Out- door Practice.		Vaccination.	
		Mons.	Mons.		Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	
Edinburgh University, M.B. & C.M., . .	21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
University of Glasgow, M.B. & C.M., . .	21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
University of Aberdeen, M.B. & C.M., . .	21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
University of St Andrews, M.B. & C.M., .	21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
London University, M.B.	21	6	12	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
University of Durham, M.B. & M.D., . .	21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Dublin University, M.B.	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
"Surgical Diploma.	12	12	12	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
The Queen's University of Ireland, M.D., .	12	12	12	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Royal College of Physicians, London, . .	21	12	12	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Royal College of Physicians, Edinburgh, .	21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
King and Queen's Col. of Phys. Ireland, .	21	6	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Royal College of Surgeons, London, . . .	21	12	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Royal College of Surgeons, Dublin, . . .	21	18	18	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Royal College of Surgeons, Edinburgh, . .	21	12	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Faculty of Phys. and Surgeons, Glasgow, .	21	12	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
For Double Qualification by Royal Col- lege of Phys. and Surg. of Edinburgh, . .	21	12	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
For Double Qualification by Royal Col- lege Phys. Edinburgh, and Faculty of Physicians and Surgeons of Glasgow, . .	21	12	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Apothecaries' Hall, England,	21	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
"Ireland,	21	6	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	

EXAMINING POST-LAW BOARD. Candidates for the appointment of Medical Officer are required to be registered under the Medical Act, and must be legally qualified to practise both Medicine and Surgery, in virtue of Diplomas or Licences granted by a competent legal authority in England, Scotland, or Ireland.

Before making any application to these regulations in any various circumstances, and other details as to the order in which, according to some Licensing Bodies, the examiners shall be called out, etc., may be obtained by consulting the published Chart of the Colleges, etc. Students should apply to the Secretary to each Board which they intend to pass for a detailed copy of its regulations.

* Students from the School of Social Work are admitted to examinations at the Royal College of Surgeons of England, if they have followed the course of study required by the regulations of the Royal College of Surgeons of Edinburgh. Students in Scotland, therefore, are not required to attend more than one course of Lectures, 37, six months' duration, to obtain a second diploma, which is not held.

MEDICAL SCHOOLS OF SCOTLAND, 1880-81.

WINTER SESSION.

SUBJECTS.	UNIVERSITY OF EDINBURGH.	SCHOOL OF MEDICINE, EDINBURGH.	UNIVERSITY OF GLASGOW.	ANDERSON'S COLLEGE, GLASGOW.	GLASGOW ROYAL INFIRMARY SCHOOL OF MEDICINE.	UNIVERSITY OF ABERDEEN.	UNIVERSITY OF ST. ANDREWS.
Anatomy, Systematic and Practical, with Demonstrations.	Professor Turner.	Dr Handy-side † and Mr J. Symington.	Professor Cleland.	Dr A. M. Buchanan.	Mr H. E. Clark.	Professor Struthers.	...
Physiology, or Institutes of Medicine.*	Professor Rutherford.	Dr James and Mr James Hunter.	Professor M'Kendrick.	Dr C. M'Vail.	Mr W. J. Fleming.	Professor Stirling.	Professor Pettigrew.
Chemistry, and Practical Chemistry.	Professor C. Brown.	Dr Macadam, Mr King, † Mr I. Macadam, Dr Drinkwater, and Mr J. Y. Buchanan.	Professor J. Ferguson.	Professor Dittmar.	Dr John Clark.	Professor Brazier.	Professor Heddle.
Materia Medica and Therapeutics.	Professor Fraser.	Dr Moinet † and Dr Wm. Craig.	Professor Charteris.	Dr Merton.	Dr John Dougall.	Professor Davidson.	...
Practice of Medicine.	Professor Grainger Stewart.	Drs Wyllie, † Adleek, and Bramwell.	Professor Gairdner.	Dr S. Gemmill.	Dr A. Wood Smith.	Prof. Smith-Shand.	...
Surgery.	Professor Spence.	Dr Watson, † Mr Chiene, Dr John Duncan, Dr Miller.	Professor Macleod.	Dr Dunlop.	Dr H. C. Cameron.	Professor Pirrie.	...
Midwifery.	Professor Simpson.	Drs Angus Macdonald, H. Croom, and C. Bell. †	Professor Leishman.	In Summer.	In Summer.	Professor Stephenson.	...
Natural Philosophy.	Professor Tait.	...	Professor Sir Wm. Thomson.	Prof. Forbes.	...	Professor Niven.	Professor Butler.
Natural History.	Professor Sir Wyville Thomson.	Dr A. Wilson.	Professor Young.	...	...	Professor J. Cossar Ewart.	Professor Nicholson.
General Pathology.	Professor Sanders.	Dr B. C. Waller and Dr Buist.	Dr Joseph Coats.	At Royal or Western Infirmary.	...	Dr Redger.	...
Clinical Medicine.	Professors MacLagan, Sanders, G. Stewart, and T. R. Fraser.	Drs Balfour, † Muirhead, and Brakenridge.	Prof. M'Call Anderson & Physicians of Western Infirmary.	The Physicians of the Royal Infirmary.		Drs Smith-Shand, Beveridge, and Fraser.	...
Clinical Surgery.	Professor Annandale.	Mr Joseph Bell.	Prof. George Buchanan & Surgeons of Western Infirmary.	The Surgeons of the Royal Infirmary.		Drs Pirrie, Ogston, and O. Will.	...

Lectures on the Diseases of the Ear are given in Edinburgh during the Winter Session by Dr Kirk Duncanson.

Practical Physiology is taught by the respective professors during the Winter Session in Edinburgh and Aberdeen.

* This course is equivalent to that given under the name of General Anatomy and Physiology in the English Schools. Special schedules are issued by the London Boards for their Scotch students, which should always be inquired for.

† These are not conjoint courses, but separate ones by the gentlemen named.

‡ This is a joint course.

MEDICAL SCHOOLS OF SCOTLAND, 1881.

SUMMER SESSION.

SUBJECTS.	UNIVERSITY OF EDINBURGH.	SCHOOL OF MEDICINE, EDINBURGH.	UNIVERSITY OF GLASGOW.	ANDERSON'S COLLEGE, GLASGOW.	GLASGOW ROYAL INFIRMARY SCHOOL OF MEDICINE.	UNIVERSITY OF ABERDEEN.
Practical Anatomy and Demonstrations.	Professor Turner.	Dr Handyside* and Mr J. Symington.	Professor Cleland.	Dr A. M. Buchanan.	Mr H.E. Clark.	Professor Struthers.
Botany.	Professor Dickson.	...	Professor J. Bayley Balfour.	Prof. Wilson.	...	Professor J. W. H. Trail.
Materia Medica.	Professor Fraser.	Drs Moinet* and Craig.	Professor Charteris and Dr Napier.	Dr Morton and Dr Pollock.	...	Professor Davidson.
Midwifery.	Professor Simpson.	Drs Keiller,* Underhill, Croom, and Charles Bell.	...	Dr J.G. Wilson.	Dr James Stirtan.	Professor W. Stephenson.
Medical Jurisprudence.	Professor MacLagan.†	Dr Littlejohn † and Mr H. A. Husband.*	Professor Simpson.	Dr Alexander Lindsay.	Dr William Macewen.	Professor Ogston.‡
Comparative Anatomy.	Professor Turner.	Dr Handyside.	...	...	...	Professor J. Cossar Ewart.
Practical Physiology, including Histology.	Professor Rutherford.	Dr James and Mr James Hunter.	Professor M'Kendrick.	Dr M'Vail.	Mr W. J. Fleming.	Professor Stirling.
Practical Pathology, including Histology.	Professor Sanders.	...	Dr Joseph Coats.	Dr Foulis, at Royal Infirmary.	Dr D. Foulis.	Dr Rodger.
Practical Chemistry.	Professor Crum Brown.	Dr Macadam, Mr King, Mr Macadam, Dr Drinkwater, and Mr J. Y. Buchanan.*	Professor J. Ferguson.	Professor Dittmar.	Dr John Clark.	Prof. Brazier.
Operative Surgery.	Professor Spence.	Dr Watson,* Mr Chiene, Dr J. Duncan, Dr A.G. Miller.	Professor M'cleod.	Dr Dunlop.	Dr H. C. Cameron.	...
Pathology.	Professor Sanders.	Dr B. C. Waller, and Dr Buist.	...	Dr Foulis, at Royal Infirmary.	Dr D. Foulis.	...
Mental Diseases.	Dr Clouston.	...	...	...	Dr Alex. Robertson.	...
Natural History.	Professor Sir Wyville Thomson.	Dr A. Wilson	Professor Young.	...	...	Professor J. Cossar Ewart.
Clinical Medicine.	Professors Sanders, G. Stewart, and T. R. Fraser.	Drs Balfour,† Muirhead, and Brakenridge.	Prof. M'Call Anderson and Physicians of W. Infirmary.	The Physicians of the Royal Infirmary.		Drs Smith-Shand, Beveridge, and Fraser.
Clinical Surgery.	Professor Annandale.	Mr Joseph Bell.	Prof. George Buchanan and Surgeons of W. Infirmary.	The Surgeons of the Royal Infirmary.		Drs Pirrie, Ogston, and O. Will.

Operative Surgery is taught during the Summer in Edinburgh by Messrs Bell and Chiene and Drs Duncan and Miller, and in Glasgow by Professor Macleod. Instruction in Vaccination is also given at the Royal Public Dispensary, Edinburgh, on Wednesdays and Saturdays at 12, both Summer and Winter, by Dr Husband; at the Faculty Hall, Glasgow, on Mondays at 12, by Dr Thomson; and at the Royal Infirmary, Glasgow, on Mondays and Thursdays at 12 o'clock, by Dr Tannahill, and Dr M'Vail, at Western Infirmary, on Mondays at 1 P.M. Medical Psychology and Insanity are taught in Summer by Dr Clouston and Dr J. B. Tuke in Edinburgh, and in Glasgow by Dr Yellowlees and Dr Robertson; the Diseases of Children by Drs Andrew, Dunsinure, and Carmichael; the Diseases of the Eye by Dr Argyll Robertson in Edinburgh, Professor A. Dyce Davidson in Aberdeen, and by Dr Thomas Reid, Mr Clark, and Dr Wolfe in Glasgow; the Diseases of the Ear by Dr Kirk Duncanson in Edinburgh, and by Dr J. P. Cassells and Dr Johnstone Macfie in Glasgow; and Dental Surgery by Dr J. C. Woodburn in Glasgow, and Mr Williamson in Aberdeen.

* These are not conjoint courses, but separate ones by the gentlemen named.

† Dr Ogston delivers his courses only in Winter. Dr Littlejohn and Mr H. A. Husband give courses during both the Winter and Summer Sessions. Dr MacLagan also lectures during both Summer and Winter. The Winter Course is chiefly intended for law students, but is open to medical students also.

‡ This is a joint course.

•• For additional Summer Courses on special subjects, see the Prospectus of each School.

LIST OF HOSPITALS, DISPENSARIES, ETC., IN CONNEXION WITH THE MEDICAL SCHOOLS OF SCOTLAND.

EDINBURGH.

ROYAL INFIRMARY, including **LOCK HOSPITAL**. Upwards of 560 Beds. Visits daily from 12 till 2 P.M. Physicians—Drs Maclagan, Sanders, and Grainger Stewart, Professors of Clinical Medicine; Professor Simpson and Dr Angus Macdonald (for Diseases of Women); Drs G. W. Balfour, Claud Muirhead, and D. J. Brakenridge, Clinical Lecturers. Assistant Physicians—Drs John Wyllie, James O. Affleck, and Andrew Smart. Consulting Physicians—Dr D. R. Haldane; Dr Alex. Keiller (for Diseases of Women). Pathologist, Dr D. J. Hamilton.

Surgeons—Professors Spence and Annandale, Mr Joseph Bell, Dr John Duncan, and Mr Chiene. Extra Surgeons, Dr P. H. Watson; Dr Thomas Keith (for Ovarian Diseases). Assistant Surgeons, Drs A. G. Miller, P. H. Maclaren, and John Bishop. Consulting Surgeons, Dr Dunsmure and Dr Gillespie. Ophthalmic Surgeons, Mr Walker and Dr Argyll Robertson. Dental Surgeon, Dr John Smith.

CONVALESCENT HOUSE, Corstorphine. Acting Surgeon, Dr P. H. Maclaren.

CHAMBERS HOSPITAL FOR THE SICK AND INJURED. 24 Beds for medical and surgical patients. Physician, Dr Halliday Douglas. Surgeon, Dr P. H. Watson.

ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL. 30 Beds; about 200 in-patients and 450 out-patients yearly. Consulting Physicians, Drs Moir and Graham Weir. Physicians, Dr Keiller, Professor Simpson, Drs Halliday Croom and Angus Macdonald. Consulting Surgeon, Dr Dunsmure.

ROYAL HOSPITAL FOR SICK CHILDREN. 60 Beds; average number of out-patients, about 5600. Consulting Physicians, Sir Robert Christison, Dr C. Wilson, Dr Graham Weir, and Dr George W. Balfour. Consulting Surgeon, Professor Spence. Physicians, Drs J. Dunsmure, jun., J. Andrew, C. E. Underhill, and R. J. Blair Cunyngame. Extra Physicians, Drs Carmichael and Playfair. Surgeon-Dentist, Dr Smith. Pathologist, Professor Sanders. Ophthalmic Surgeon, Dr Argyll Robertson.

ROYAL PUBLIC DISPENSARY AND VACCINE INSTITUTION. About 12,700 patients annually. Medical Officers, Professors Sanders and Spence, Drs Linton, Husband, Andrew, D. Wilson, Moinet, Alexander Sinclair, Allan, Jamieson, Cotterill, and Miller. Physician-Accoucheurs, Drs Keiller and Andrew. Superintendent of Vaccination, Dr Husband. Medical Secretary, Dr Andrew. Clinique daily at 2 P.M. Vaccination on Wednesdays and Saturdays at 12 noon. Apothecary, Mr John Nicol.

NEW TOWN DISPENSARY. About 10,000 patients annually. Medical Officers, Drs Cunyngame, Affleck, Cadell, Dunsmure, Wyllie, Carmichael, Ritchie, Tuke, Playfair, Montgomerie Bell, and James. Physician-Accoucheurs, Drs Dunsmure, jun., and Underhill. Superintendent of Vaccination, Dr Affleck. Clinique daily at 2 P.M. Vaccination on Tuesdays and Fridays from 12 to 1.

ROYAL ASYLUM FOR THE INSANE. About 660 patients. Physician, Dr Clouston.

EYE INFIRMARY, 6 Cambridge Street, Lothian Road. Surgeons, Benjamin Bell, Esq., F.R.C.S., and Joseph Bell, F.R.C.S. Assistant Surgeon, Dr J. Kirk Duncanson. Open daily at 1 P.M. Average number of patients annually, 900.

EYE DISPENSARY, 54 Cockburn Street. About 2000 patients annually. Surgeons, Mr Walker, Dr Wilson, and Dr Argyll Robertson. Open Mondays, Wednesdays, and Fridays, at 1 P.M. Clinical instruction during the summer session.

EAR DISPENSARY OF EDINBURGH, 17 Thistle Street. Drs T. Keith and Blair Cunyngame, and Mr Chiene. Open Tuesdays at 11.

EAR DISPENSARY, 6 Cambridge Street, Lothian Road. Surgeon, Dr J. Kirk Duncanson. Open Mondays and Thursdays, from 12 to 1 o'clock.

DENTAL DISPENSARY, amalgamated with **DENTAL HOSPITAL AND SCHOOL**, 30 Chambers Street. Consulting Surgeon, Professor Spence. Consulting Physician, Professor Sanders. Surgeon-Dentist, Dr John Smith. Dental Surgeons, Dr Roberts, Messrs C. Matthew, D. Hepburn, J. T. Cunningham, W. B. Macleod, M. Finlayson, A. Wilson, G. W. Watson, W. Chisholm, M. Macgregor, and A. Cornack. Assistant Dental Surgeons, J. K. Chisholm, junr., and E. A. Cornack. Daily, 9 to 10 A.M. Average number of patients, 4500 per annum.

GLASGOW.

ROYAL INFIRMARY. 532 Beds. Visits daily at 9 A.M. Physicians, Drs Maclaren, Scott Orr, Wood Smith, Perry, and Charteris.

Surgeons, Drs Cameron, Morton, Watson, Macewen, and Dunlop. Gynecologist, Dr Stirton. Aural Surgeon, Dr Macfie. Dental Surgeon, Dr Woodburn. Dispensary Physicians, Drs Mather and Lawrie. Extra Dispensary Physicians, Drs J. W. Anderson, John Weir, and John Dougall. Dispensary Surgeons, Mr Clark and Dr Lothian. Extra Dispensary Surgeons, Dr Whitson, Dr W. J. Fleming, and Dr Foulis. Vaccinator, Robert Tannahill, M.D. M. Thomas, M.D., Superintendent.

WESTERN INFIRMARY. This Hospital contains 245 Beds for Medical and Surgical patients, with Wards for Skin Diseases and Diseases of Women, and out-door Midwifery department. Physicians, W. T. Gairdner, M.D., T. McCall Anderson, M.D., James Finlayson, M.D. Diseases of Women, W. Leishman, M.D. Surgeons, George H. B. Macleod, M.D., George Buchanan, M.D., A. Patterson, M.D. Out-door Physicians-Accoucheur, Robert Kirk, M.D., W. L. Reid, M.D., M. Cameron, M.D. Dispensary Physicians, Gavin P. Tennent, M.D., Joseph Coats, M.D., D. C. McVail, M.B. Dispensary Surgeons, James G. Lyon, M.D., D. N. Knox, M.B., James Christie, M.D. Extra Dispensary Physician, S. Gemmell, M.D. Extra Dispensary Surgeon, J. C. Renton, M.B. Pathologist, Joseph Coats, M.D. Dispensary Surgeon for Diseases of the Ear, Thomas Barr, M.D., Dental Surgeon, James N. Brownlie, L.D.S. Medical Superintendent, John Alexander, M.D. Lady Superintendent, Miss E. Clyde.

The hour of visit is 9 A.M. Operating days, Wednesday and Saturday. The Dispensary for out-patients is open daily at 2 P.M.

LOCK HOSPITAL. 81 Beds. Medical Officers, Drs James Dunlop and A. Patterson. In-patients, 456.

LYING-IN HOSPITAL AND DISPENSARY. 24 Beds; in-patients, 170; out-patients, 1118. Consulting Surgeon, Dr George Buchanan. Consulting Physician, Dr J. G. Wilson. Physicians-Accoucheur, Drs Samuel Sloan and Hugh Miller. Assistant Physicians-Accoucheur, Drs W. J. Brock and J. W. Anderson. Out-door Physicians, Drs J. Dunlop, J. Moir, T. F. Gilmour, W. Muir, and A. Sloan.

ROYAL ASYLUM FOR THE INSANE. About 550 patients. Physician-Superintendent, Dr David Yellowlees. Lectures on Mental Diseases during summer, alternately at the University and the Asylum.

EYE INFIRMARY. 75 Beds; 508 in-patients; 5032 out-patients annually. Consulting Surgeon, George Buchanan, M.D. Surgeons, Thomas Reid, M.D., Thomas S. Meighan, M.D., and Henry E. Clark, M.R.C.S. Assistant Surgeons, J. Crawford Renton, M.B., D. N. Knox, M.B., and J. Macfie, M.D.

DISPENSARY FOR SKIN DISEASES, 63 John Street. Physician, Professor McCall Anderson. Open Mondays and Thursdays at 4 P.M., for out-door patients. This Institution is in connexion with the Wards for Skin Diseases in the Western Infirmary, to which the more important cases are sent.

OPHTHALMIC INSTITUTION. Consulting Physician, Dr J. S. Cumming. Surgeon, Dr J. R. Wolfe. Acting Physician, Dr Robt. Bell. Assistant Surgeons, Wm. Pickering, M.B., and N. M. Cluckie. Open daily from 1 to 3 P.M. A Course of Lectures and Clinical Instruction during the winter and summer months.

GLASGOW HOSPITAL AND DISPENSARY FOR DISEASES OF THE EAR, 239 and 241 Buchanan Street. 12 Beds. Hour of visit, 3 P.M. Out-patients seen at 4 P.M. Number of cases treated annually, 3000. During the Winter and Summer Sessions a Course of Practical Instruction in the Treatment of Ear Disease is given to the Students attending the Clinique. Senior Consulting Physician, Dr P. Stewart. Senior Consulting Surgeon, Dr James Morton. Consulting Dental Surgeon, Dr J. C. Woodburn. Consulting Surgeon for Throat Diseases, Dr D. Foulis. Drs A. K. Irvine, A. L. Kelly, and J. Gardiner. Surgeon and Lecturer, Dr James Patterson Cassells. Clinical Assistants, Messrs Robertson and Violette.

The HUNTERIAN MUSEUM is open to Students of Medicine, for purposes of study, on presenting their matriculation tickets.

ABERDEEN.

ROYAL INFIRMARY. Upwards of 300 Beds. Visits daily at 12 o'clock. Physicians, Drs Smith-Shand, Beveridge, and Fraser. Surgeons, Drs Pirrie, A. Ogston, Will, and Garden. Ophthalmic Surgeon, Dr Davidson. Pathologist, Dr Rodger. Chloroformist, Dr P. Blaikie Smith. Dental Surgeon, Mr Williamson.

GENERAL DISPENSARY, LYING-IN AND VACCINE INSTITUTION. 7000 patients annually. Open daily.

CHILDREN'S HOSPITAL. Physicians, Drs Stephenson and Garden. Clinical instruction daily at 11 o'clock.

LUNATIC ASYLUM. Above 500 patients.

EYE INSTITUTION, General Dispensary Buildings, Guestrow. Open three days in the week at 2.30 P.M. Clinical Instruction on Diseases of the Eye and the use of the Ophthalmoscope. Average, 600 patients annually.

ARMY MEDICAL DEPARTMENT.

6 WHITEHALL YARD, S.W.

SCHEDULE OF QUALIFICATIONS NECESSARY FOR CANDIDATES DESIROUS OF OBTAINING COMMISSIONS IN THE ARMY MEDICAL DEPARTMENT, WITH THE CONDITIONS OF SERVICE, AND EXTRACTS FROM THE REGULATIONS PRESCRIBED BY THE ROYAL WARRANT OF 27TH NOVEMBER 1879, IN SPECIAL ARMY CIRCULAR OF 2ND DECEMBER 1879, BY WHICH THE PAY, PROMOTION, AND RETIREMENT OF MEDICAL OFFICERS ARE REGULATED AND DETERMINED.

1. Every candidate for a commission in the Army Medical Department must be 21 years of age and not over 28 years at the date of commencement of the competitive examination. He must produce an extract from the Register of his birth, or, in default, a declaration, made before a magistrate by one of his parents or guardians, giving his exact age. He must also produce a recommendation from some person of standing in society—not a member of his own family—to the effect that he is of regular and steady habits, and likely in every respect to prove creditable to the Department if a commission be granted; and also a certificate of moral character from the parochial clergyman, if possible.

2. The candidate must sign a declaration upon honour that both his parents are of unmixed European blood, and that he labours under no mental or constitutional disease, nor has any hereditary tendency thereto, nor any imperfection or disability that can interfere with the efficient discharge of the duties of a medical officer in any climate: also that he does not hold, and has never held,

any commission or appointment in the public services. His physical fitness will be determined by a Board of Medical Officers, who are required to certify that the candidate's vision is sufficiently good to enable him to perform any surgical operation without the aid of glasses. A moderate degree of myopia will not be considered a disqualification, provided it does not necessitate the use of glasses during the performance of operations, and that no organic disease of the eyes exists. The Board must also certify that he is free from organic or other disease, and from constitutional weakness, or tendency thereto, or other disability of any kind likely to unfit him for military service in any climate.

3. Certificates of age, registration of diplomas, etc., and of character, must accompany the declaration when signed and returned.

4. Candidates will be examined by the Examining Board in the following compulsory subjects, and the highest number of marks attainable will be distributed as follows:—*a.* Anatomy and Physiology, 1000; *b.* Surgery, 1000; *c.* Medicine, including Therapeutics, the Diseases of Women and Children, 1000; *d.* Chemistry and Pharmacy, and a practical knowledge of drugs, 100. [*N.B.*—The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of Medical and Surgical patients at the bedside.] The eligibility of each candidate for the Army Medical Service will be determined by the result of the examination in these subjects only. Examinations will also be held in the following voluntary subjects, for which the maximum number of marks will be—French and German (150 each), 300; Natural Sciences, 300. The knowledge of Modern Languages being considered of great importance, all intending competitors are urged to qualify in French and German. The Natural Sciences will include Comparative Anatomy, Zoology, Natural Philosophy, Physical Geography, and Botany, with special reference to *Materia Medica*. The number of marks gained in both the voluntary subjects will be added to the total number of marks obtained by those who shall have been found qualified for admission, and whose position on the list of successful competitors will thus be improved in proportion to their knowledge of modern languages and natural sciences.

5. After passing this examination, every qualified candidate will be required to attend one course of practical instruction at the Army Medical School as a probationer on—(1) Hygiene; (2) Clinical and Military Medicine; (3) Clinical and Military Surgery; (4) Pathology of Diseases and Injuries incident to Military Service.

6. All candidates will be required to conform to such rules of discipline as the Senate may from time to time enact, and they will be required to provide themselves with uniform, viz., the regulation undress uniform of a surgeon, but without sword.

7. They will be required to attend the A. M. D. Mess at Netley, and to conform to the Rules and Regulations thereof.

The following Extracts from the Royal Warrant of 27th November 1879, in Special Army Circular of 2nd December 1879, are republished for the information of Candidates for Commissions in the Army Medical Department.

RANK AND PAY.

The ranks and daily rates of pay of the officers of the Army Medical Department shall be as follows:—Surgeon-General £2, after twenty-five years' service £2, 5s., after thirty years' service £2, 7s., after thirty-five years' service £2, 10s.; Deputy Surgeon-General £1, 10s., after twenty-five years' service £1, 12s., after thirty years' service £1, 15s., after thirty-five years' service £1, 17s.; Surgeon-Major, on appointment £1, after five years' service as such £1, 5s.; Surgeon, on appointment £250 a year, after ten years' service 17s. 6d. daily. Charge pay: the principal medical officer of an army in the field, consisting of 10,000 men and upwards, £1 daily; of 5000 men and upwards, 15s. daily; of less

than 5000, 10s. daily. The principal medical officer of a colony where the number of commissioned officers and enlisted men is 1500 and upwards, 5s. daily.

The pay of medical officers shall be issued monthly in arrear.

The relative rank of officers of the Army Medical Department shall be as follows:—I. A Surgeon-General and Director-General shall rank as Major-General. II. A Deputy Surgeon-General shall rank as Colonel. III. A Surgeon-Major shall rank as Major; after twenty years' service as Surgeon-Major he shall rank as Lieutenant-Colonel. IV. A Surgeon shall rank as Captain. V. A Surgeon on probation shall rank as Lieutenant.

APPOINTMENT, PROMOTION, AND RETIREMENT.

First Appointments.

Every candidate for appointment in the Army Medical Department shall possess two diplomas or licenses, recognised by the General Medical Council, one to practise medicine, and the other surgery, and shall be registered under the Medical Act in force in the United Kingdom at the time of his appointment.

A public and open competition shall be held twice in the year for the admission of qualified candidates as probationers. The number of appointments so competed for shall be not less than half of the number of vacancies which shall have arisen in the last completed half-year ending on the 30th June or 31st December.

Not less than half the number of vacancies shall be filled up by competition, and it shall be competent for our Secretary of State to fill up the remaining number from such qualified candidates as may be proposed by the governing bodies of Public Schools of Medicine in our United Kingdom or in our Colonies as he may think proper. Every candidate so proposed shall be certified by the governing body proposing him to be duly qualified according to a standard to be laid down by our Secretary of State, and shall be approved by the Director-General.

Our Secretary of State shall from time to time fix the order of precedence and the proportion in which the several Schools of Medicine shall be offered the nomination of candidates.

A Surgeon on probation shall on appointment be sent to some large station for instruction in Ambulance and Hospital Corps duties, until the commencement of the next course of study at the Army Medical School. After passing through such course at the Army Medical School as our Secretary of State shall decide, the Surgeon on probation, after passing a qualifying examination in the military medical subjects taught there, and satisfying the Director-General that he is a person of proper skill, knowledge, and character, for permanent appointment in the Army Medical Department, shall be commissioned as Surgeon.

The Surgeons on probation who pass out of the Army Medical School at one qualifying examination shall take precedence among each other as Surgeons, as follows:—(a.) Those appointed on nomination according to their date of joining on probation. (b.) Those appointed on competition according to the last day of the competitive examination, and in the order of merit at such examination, with priority over any joining under sub-section (a) on the last day of the competitive examination.

A Surgeon's commission shall bear the date of the day of his passing out of the Army Medical School.

A candidate for appointment as Surgeon in our Royal Malta Fencible Artillery shall be required to pass such a professional examination as our Secretary of State may from time to time determine.

PROMOTION.

Surgeon - Major.

A Surgeon shall be promoted to the rank of Surgeon-Major on completing

12 years' full pay service, of which at least 3 years shall have been abroad, if he be recommended by the Director-General.

In a case of distinguished service, a Surgeon, if qualified, may be promoted to the rank of Surgeon-Major without reference to seniority; and in such a case the recommendation detailing the services for which the Officer is proposed for promotion shall be published in the Gazette in which such promotion shall appear.

Brigade Surgeon.

A Brigade Surgeon shall be selected, on the recommendation of our Commander-in-Chief, for ability and merit, from Surgeons-Major who shall have served abroad for at least 8 years as Surgeon-Major and Surgeon.

Deputy Surgeon-General and Surgeon-General.

All promotions from the rank of Brigade Surgeon to that of Deputy Surgeon-General, and from the rank of Deputy Surgeon-General to that of Surgeon-General, shall be given for ability and merit upon the selection of our Commander-in-Chief, with the approval of our Secretary of State; and the grounds of such selection shall be stated to us in writing. In all such cases the amount of foreign service shall be expressly stated.

On appointment as Honorary Physician or Honorary Surgeon to Her Majesty, under Article 35, an Officer below the rank of Deputy Surgeon-General shall, if duly qualified under Article 21, be promoted to that rank, and shall remain supernumerary of his rank until he would have attained the rank of Deputy Surgeon-General in ordinary course.

An Officer shall not be eligible for promotion to the rank of Deputy Surgeon-General unless he shall have served at least 10 years abroad, including three years in India.

RETIREMENT.

Voluntary Retirement.

A Medical Officer, after completing 10 years' service, may be permitted to retire on the gratuity or pension laid down in Article 47, when it shall be deemed expedient by our Secretary of State. Before such voluntary retirement be permitted it shall be specially recommended by our Commander-in-Chief, and approved by our Secretary of State.

Any Officer who shall voluntarily retire before the age of 55 years shall be liable to be called upon to serve, in a case of national emergency, in a rank not lower than that from which he shall retire, until he shall complete the age of 55.

A Medical Officer of the rank of Brigade Surgeon, Surgeon-Major, or Surgeon, shall be placed on the Retired List at the age of 55, and a Surgeon-General or Deputy Surgeon-General at the age of 60 years.

Honorary Rank on Retirement.

A Medical Officer retiring after full pay service of 20 years and upwards, may, if recommended for the same by our Commander-in-Chief, receive a step of honorary rank, but without any consequent increase of half-pay.

EXCHANGES.

An Officer of the Army Medical Department shall be permitted to exchange with another Officer of the same Department, under such conditions and regulations as shall from time to time be approved by us.

REWARDS AND HONOURS.

Good Service Pensions shall be awarded to the most meritorious Officers of the Army Medical Department, under such regulations as shall be from time to time determined by us, with the advice of our Secretary of State.

Six of the most meritorious Officers of the Army Medical Department shall be named our Honorary Physicians, and six our Honorary Surgeons.

SERVICE ON THE WEST COAST OF AFRICA.

Service of Medical Officers upon the West Coast of Africa shall be voluntary, except for those who enter the Department specially for African Service.

Each year or portion of a year shall be allowed to reckon double towards retirement, provided that the Officer shall have served at least 12 months on the West Coast of Africa, but it shall not reckon double towards temporary half-pay or increased pay.

For each year's service on the Coast, a Medical Officer shall be entitled to a year's leave at home, and for every additional period beyond a year he shall have an equivalent extension of leave.

Officers who may enter the Department expressly for service on the West Coast of Africa, and those who volunteered for that service from the Department after 1st March 1873, shall receive double pay while actually serving on the Coast.

Officers who enter the Department expressly for service on the West Coast of Africa shall enter under the same qualifications as other Medical Officers, but they may be admitted at a later age. They will be required to complete three years' actual service on the Coast, after which they shall be eligible for general service. If it shall be certified by a Medical Board that any such Officer is unfit for further duty on the Coast, he shall be eligible for general service, though he may not have completed three years' service there.

A Surgeon-Major of the African service who was promoted while serving on the Coast, and who entered that service before the 1st March 1873, may, on the completion of three successive tours of service on the Coast, each of 12 months, in the rank of Surgeon-Major, be transferred to the General List.

A Medical Officer transferred from the African Service under the conditions laid down in Article 41, shall join the general service according to the date of his actual Commission.

SICK LEAVE.

An Officer may, on the recommendation of a Medical Board, be allowed sick leave of absence on full pay for a period of six months; but in special cases our Secretary of State may, on the recommendation of the Director-General, extend such sick leave on full pay for a further period not exceeding six months.

TEMPORARY HALF-PAY.

A Medical Officer who may become unfit for service in consequence of wounds received in action, or of ill-health contracted in and by the performance of military duty, as certified by a Medical Board, may be granted temporary half-pay, to be renewed, on a report of a Medical Board, from time to time, until he shall recover, and until an opportunity shall occur for his re-employment. In special cases in which the circumstances may appear to our Secretary of State to call for exceptional consideration, it shall be sufficient that the disability shall have been contracted in the service.

If after remaining for a period of not less than one year on half-pay he shall be reported by a Medical Board to be permanently unfit for further service, he may, provided he shall have been on full pay for a total period of at least five years, be placed upon permanent half-pay.

NON-EFFECTIVE PAY.

The daily rates of retired pay, or half-pay for Medical Officers shall be as follows:—Surgeon-General, after thirty years' service, £1, 17s. 6d.; twenty-five years, £1, 13s. 6d.; twenty years, £1, 10s. Deputy Surgeon-General, after thirty years, £1, 5s. 6d.; twenty-five years, £1, 2s. 6d.; twenty years, £1, 1s. Surgeon-Major, after twenty-five years, £1; twenty years, 16s. 6d.; fifteen years, 13s. 6d.; twelve years, 11s. Surgeon and Surgeon-Major, after ten years' service receive a gratuity of £1000.

Temporary Half-Pay.

A Medical Officer, under five years' service, receives 6s. daily; after five years, 8s.; after ten years, 10s.; after 15 years, 13s. 6d.

In all matters not specially provided for in this our Warrant, the Officers of the Army Medical Department shall be subject to the general regulations for the departments of our army.

The foregoing warrant will not be applicable to Army Medical Officers while in India or on the Indian establishment, and no additional emolument will, under its provisions, accrue to medical officers serving in that country.

Servants' Allowance.

Medical Officers will have the option of employing as servants privates of not less than two years' service in the Army Hospital Corps, or of drawing the money allowance in lieu. The privates so employed will be men of short service, and will not receive departmental pay.

Forage Allowance.

The following will be added to paragraph 1, Clause 58, Army Circulars, 1878, which prescribes the number of horses for which forage or an allowance in lieu thereof may ordinarily be drawn by officers.

DEPARTMENTAL OFFICERS.

Army Medical.

		At Home Stations.	At Foreign Stations.	With an Army in the field
Surgeon-General,	Horses,	3	3	4
Deputy Surgeon-General,	"	2	2	3
Surgeon-Major,	"	1	1	2

ARMY MEDICAL SCHOOL.

ROYAL VICTORIA HOSPITAL, NETLEY.

President of the Senate.—Sir William M. Muir, K.C.B., M.D., Director-General of the Army Medical Department.

Members of the Senate.—J. W. Reid, M.D., Director-General Naval Medical Department; Sir J. Fayrer, M.D., K.C.S.I., F.R.S., Physician to the Indian Council; Surgeon-General T. Longmore, C.B., Professor of Military Surgery; Surgeon-General W. C. Maclean, M.D., C.B., Professor of Military Medicine; William Aitken, M.D., F.R.S., Professor of Pathology; F. S. B. F. De Chaumont, M.D., F.R.C.S.E., F.R.S., Surgeon-Major, Professor of Military Hygiene; J. D. Macdonald, M.D., F.R.S., R.N., Inspector-General of Hospitals and Fleets, Professor of Naval Hygiene; The Principal Medical Officer, Royal Victoria Hospital, Netley.

Assistant Professors.—Surgeons-Major H. R. L. Veale, M.D., W. R. Tobin, J. P. H. Boileau, M.D., and J. L. Notter, M.D.

Candidates for Commissions in the Army, Navy, and in the Queen's Indian Service, proceed to Netley after passing the Examination at London. At Netley they attend the Medical and Surgical Practice of the Royal Victoria Hospital, and learn the system and arrangements of Military Hospitals. During four months they attend the lectures given by the Professors and Assistant-Professors, and go through a course of practical instruction in the Hygienic Laboratory and Microscopical Room. The lectures and practical instruction are intended to explain the specialities of Military Medical Practice, attention being directed to gunshot and other wounds, surgical arrangements in the field

during action and sieges, means of transport, field hospitals, tropical diseases and their means of investigation, service in India and in the various colonies, the sanitary arrangements in peace and war, and the means of carrying out the sanitary regulations. Every opportunity is taken of practising operations on the dead body, and practical points of a like kind.

INDIAN MEDICAL SERVICE.

REGULATIONS FOR THE EXAMINATION OF CANDIDATES FOR THE APPOINTMENT OF SURGEON IN HER MAJESTY'S INDIAN MEDICAL SERVICE.

1. *Limits of Age*.—All natural-born subjects of Her Majesty, between 22 and 28 years of age at the date of the examination, and of sound bodily health, may be Candidates. They may be married or unmarried. They must possess a Diploma in Surgery, or a license to practise it, as well as a Degree in Medicine, or a license to practise it in Great Britain or Ireland.

2. *Declaration to be submitted*.—They must subscribe and send in to the Military Secretary, India Office, Westminster, so as to reach that address at least a fortnight before the date fixed for the Examination, a declaration according to a prescribed form.

3. This declaration must be accompanied by the following documents:—

a. *Proof of age*, either by extract from the register of the parish in which the Candidate was born, or, where such extract is unattainable, by his own declaration (pursuant to the Act 5 & 6 Will. 4. c. 62), form of which can be obtained at the India Office. A certificate of baptism which does not afford proof of age will be useless.

b. *A certificate of moral character* from a magistrate, or a minister of the religious denomination to which the Candidate belongs, who has personally known him for at least the two years preceding the date of his application.

c. *A certificate of registration*, in accordance with the Medical Act of 1858, of the degrees, diplomas, and licenses possessed by the Candidate.

4. *Physical Examination*.—The physical fitness of Candidates will be determined previous to examination by a Board of Medical Officers, who are required to certify that the Candidate's vision is sufficiently good to enable him to perform any surgical operation without the aid of glasses. A moderate degree of myopia would not be considered a disqualification, provided it did not necessitate the use of glasses during the performance of operations, and that no organic disease of the eyes existed.

Every Candidate must also be free from organic disease of other organs, and from constitutional weakness, or other disability likely to unfit him for military service in India.

5. *Subjects for Examination*.—On producing the foregoing qualifications, the Candidate will be examined by the examining Board in the following compulsory subjects, and the highest number of marks attainable will be distributed as follows:—

	Marks.
a. Anatomy and Physiology,	1000
b. Surgery,	1000
c. Medicine, including Therapeutics, the Diseases of women and children,	1000
d. Chemistry and Pharmacy, and a practical knowledge of Drugs,	100

(The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside.)

6. The eligibility of each Candidate for the Indian Medical Service will be determined by the result of the examinations in these subjects only.

7. *Voluntary Examination*.—Candidates who desire it will be examined in

French, German, and Hindustani, Comparative Anatomy, Zoology, Natural Philosophy, Physical Geography, and Botany, with special reference to *Materia Medica*.

8. The number of marks gained in these subjects will be added to the total number of marks obtained in the obligatory part of the examination by Candidates who shall have been found qualified for admission, and whose position on the list of successful competitors will thus be improved in proportion to their knowledge of modern languages and natural sciences.

9. The maximum number of marks allotted to the voluntary subjects will be as follows :—

French, German, and Hindustani (150 each),	450
Natural Science,	300

10. *Test-Books*.—The subjects for this part of the examination will be taken from the following books :—

Animal Kingdom, by W. S. Dallas, F.L.S.

Outlines of the Structure and Functions of the Animal Kingdom, by Rymer Jones; or *Cours Élémentaire d'Histoire Naturelle*, par Milne Edwards.

Lindley's *School Botany*, Lindley's *Medical and Economic Botany*, Hensley's *Elementary Course of Botany*.

Elements of Natural Philosophy, by Golding Bird and C. Brooks.

Physical Geography, by Mrs Somerville.

11. The Examiners in London will prepare a list in order of merit, with the marks affixed in the different subjects, to be transmitted to the Director-General and communicated to the Professors of the Army Medical School. If any Candidate is found to be deficient on any particular subject, this shall be stated, in order that he may receive special instruction on the point at Netley.

12. *Course at Netley*.—After passing the preliminary examination, Candidates will be required to attend one entire course of practical instruction at the Army Medical School, before being admitted to examination for a commission, on—

(1.) Hygiène.

(2.) Clinical and Military Medicine.

(3.) Clinical and Military Surgery.

(4.) Pathology of Diseases and Injuries incident to Military Service.

These courses are to be of not less than four months' duration; but Candidates who have already gone through a course at Netley as Candidates for the Army or Navy Medical Service may, if thought desirable, be exempted from attending the School a second time.

13. *Pay and Uniform while at Netley*.—During the period of his residence at the Army Medical School, each Candidate will receive an allowance of 8s. per diem with quarters, or, when quarters are not provided, with the usual lodging and fuel and light allowances of subalterns, to cover all costs of maintenance; and he will be required to provide himself with uniform (viz., the regulation undress uniform of a Surgeon of the British Service, but without the sword).

14. All Candidates will be required to conform to such rules of discipline as the Senate may from time to time enact.

15. *Examination at Netley*.—At the conclusion of the course, Candidates will be required to pass an examination on the subjects taught in the School. The examination will be conducted by the Professors of the School.

The Director-General, or any Medical Officer deputed by him, may be present and take part in the examination. If the Candidate give satisfactory evidence of being qualified for the practical duties of an Army Medical Officer, he will be eligible for a Commission as Surgeon.

16. *Position on List of Surgeons, how determined*.—The position of the Candidates on the list of Surgeons will be determined by the combined results of the preliminary and of the final examinations, and, so far as the re-

quirements of the service will permit, they will have the choice of Presidency in India according to their position in that list.

INDIA OFFICE, *June 1880.*

N.B.—The examinations for admission to the Indian Medical Service usually take place twice a year, viz., in February and in August.

MEMORANDUM REGARDING THE POSITION OF MEDICAL OFFICERS TO BE
APPOINTED TO HER MAJESTY'S INDIAN FORCES.

India Office, June 1880.

1. The regulations are those in force at the present time. They are subject to any alteration that may be determined on.

2. *Passage to India.*—Passage allowance to India on appointment will be given, or a passage provided. When passages are provided on board the Indian troop-ships, a charge for messing will be made at the rate laid down in the Royal Passage Warrant of 1st April 1879—viz., 2s. a day. Wine and beer are not included in the mess, but when provided are charged for as extra.

3. All Surgeons who shall neglect or refuse to proceed to India under the orders of the Secretary of State for India within two months from the date of leaving Netley, will be considered as having forfeited their appointment, unless special circumstances shall justify a departure from this regulation.

4. *Pay previous to Embarkation.*—Pay at the rate of 10s. a day will be allowed from date of passing final examination at the Army Medical School, until date of embarkation when a passage is provided, or for a period of two months when the Surgeon is permitted to make his own arrangements for passage. An advance of two months' pay will also be made on embarkation.

5. *Grades and Relative Rank.*—The grades of Medical Officers in the Indian Military Forces are four in number, viz. :—

1. Surgeon-General, ranking as Major-General, according to the date of his commission.
2. Deputy Surgeon-General, as Colonel, according to the date of his commission.
3. Surgeon-Major, as Major, according to the date of his commission : and after twenty years' service as Surgeon and Surgeon-Major, as Lieutenant-Colonel, but junior of that rank except for choice of quarters.
4. Surgeon, as Lieutenant, according to the date of his commission ; and after six years' service as Captain, according to the date of the completion of such service.

6. *Promotion.*—A Surgeon is promoted to Surgeon-Major on completion of twelve years' service from date of first commission, subject to his passing the prescribed examination.

7. In cases, however, of emergency, or when the good of the service renders such alteration desirable, it is competent for the Secretary of State for India, on the recommendation of the Viceroy and Governor-General of India in Council, to shorten the period of service above mentioned, in such manner as he shall deem fit and expedient.

8. The examination for promotion may be taken at any time after the Surgeon has served nine or more years.

9. When Surgeons have served the requisite time, they will be examined in the following manner :—

A series of printed questions prepared by an examining board, consisting of the Principal of the Medical College and any two or more of the professors he may associate with himself for the purpose, will be sealed and sent by the Surgeon-General to the principal medical officers of stations where Surgeons may be eligible for examination. It will be the duty of the principal medical officer of the station to deliver the sealed questions to the Surgeons, and to see that they are answered without the assistance of books, notes, or communication with any other person. The answers are to be signed and delivered,

sealed, to the Principal Medical Officer, who is to send them, unopened, to the Surgeon-General, together with a declaration from the Surgeon himself, or certificate from a superior medical officer, if there is one, that he has availed himself of every opportunity of practising surgical operations on the dead body.¹

10. The Surgeon is also required to transmit, together with his answers to the Surgeon-General, a medico-topographical account of the station where he may happen to be at the time, or of some other station where he may have been resident sufficiently long to enable him to collect the necessary information for such a report. Failing this, he will send a medico-statistical report of his charge for a period of at least twelve months.

11. If the examining board is satisfied with the replies to the questions, and the Surgeon-General is satisfied with the certificates and with the medico-topographical or statistical report, the Surgeon will be held qualified for promotion.

12. All promotion from the rank of Surgeon-Major to that of Deputy Surgeon-General, and from the rank of Deputy Surgeon-General to that of Surgeon-General, is given by selection for ability and merit.

13. *Tenure of Office in Administrative Grades.*—The tenure of office of Surgeons-General and Deputy Surgeons-General is limited to five years.

14. Deputy Surgeons-General, if not disqualified by age, are eligible either for employment for a second tour of duty in the same grade, or for employment in the higher grade of Surgeon-General by promotion thereto.

15. Absence on leave in excess of six months on medical certificate, or of four months on private affairs, involves forfeiture of appointment.

16. *Pay and Allowances when in India.*—Officers who may hereafter be appointed to the Indian Medical Service will receive pay in India according to the following scale:—

Rank.	Years' Service.	Pay and Allowances per Mensem.		
		R.	A.	P.
Surgeon-Major . . .	25	888	12	0
" . . .	20	852	3	7
" . . .	15	677	6	11
" . . .	12	640	14	6
Surgeon . . .	10	410	9	5
" . . .	6	392	5	2
" . . .	5	304	14	2
" . . .	under 5	286	10	0

17. On first appointment they will only come into receipt of Indian pay and allowances from the date of their arrival in India.

18. The monthly salaries of the principal administrative and military appointments are fixed at the following consolidated sums:—Surgeon-General, Bengal, Rs. 2700; Madras, Rs. 2500; Bombay, Rs. 2500; Deputy Surgeon-General, two at Rs. 2250, others Rs. 1800; Surgeon-Major, of twenty years' service and upwards, in charge of Native regiments, Rs. 1000, with Rs. 90 horse allowance in Cavalry regiments; Surgeon-Major in charge of Native regiments, Rs. 800, with Rs. 90 horse allowance in Cavalry regiments; Surgeon, above five years' full-pay service, in charge of Native regiments, Rs. 600, with Rs. 60 horse allowance in Cavalry regiments; Surgeon, under five years' full pay service, in charge of Native regiments, Rs. 450, with Rs. 60 horse allowance in Cavalry regiments.

19. The salaries of other medical appointments in the Civil and Military Departments are consolidated, and vary from Rs. 1800 to Rs. 400 per mensem.

¹ The Surgeon may see this certificate before it is sent to the Surgeon-General.

20. Qualified officers of the Medical Service are also eligible for appointments in the Assay Department. The salaries of these appointments are from Rs. 600 to Rs. 2250 per mensem.

21. A medical officer will, however employed, be restricted to the rate of pay laid down in para. 16, until he shall have passed the examination in Hindustani, known as the "Lower Standard."

22. Surgeons-General and Deputy Surgeons-General, on vacating office at the expiration of the five years' tour of duty, will be permitted to draw *in India* respectively an unemployed salary of Rs. 1200 per mensem in the former, and Rs. 900 in the latter case, for a period of six months from the date of their vacating office, after which they will be placed while unemployed on the following scale of pay:—Surgeon-General, after thirty years' service on full-pay, £2, 5s.; after twenty-five years' service on full-pay, £2, 5s.; after twenty years' service on full-pay, or on promotion should this period of service not be completed, £2; Deputy Surgeon-General, after thirty years' service on full-pay, £1, 14s.; after twenty-five years' service on full-pay, £1, 10s.; after twenty years' service on full-pay, or on promotion should this period of service not be completed, £1, 8s.

23. *Furloughs*.—An officer will be eligible for one year's furlough on the completion of five years' actual service in India, and for an additional year after each subsequent five years' service.

24. While on furlough an officer will receive half the emoluments of his office.

25. No absentee shall draw more than £1000 or less than £250 per annum.

26. Upon certificate of a Medical Board, an officer not entitled to furlough, if he has served not less than two years in India, may receive it for any period not exceeding two years.

27. Surgeons under six years' service, and in receipt of Indian allowances as subalterns, on returning to England on sick certificate receive passage allowance.

28. Officers of the Administrative Grades are entitled during their tenure of appointment to six months' leave of absence on sick certificate, or four months' leave on private affairs.

29. *Retiring Pensions*.—Officers of the Indian Medical Service will be allowed to retire on the following scale of pension, on completion of the required periods of service:—After thirty years' service in India, £550; after twenty-seven years' service in India, £456; after twenty-four years' service in India, £365; after twenty-one years' service in India, £292; after seventeen years' service in India, £220.

30. Time of service for pension will reckon from date of arrival in India. The period of residence at the Army Medical School will also reckon as service for the above pension, except in the cases of officers who have gone through the course at Netley as candidates for the British Army or Navy Medical Service.

31. A Surgeon-General, after five years' active employment in India in that grade, will be entitled to retire upon a pension of £350 per annum, in addition to that to which he may be entitled under the above scale.

32. A Deputy Surgeon-General will, after five years' active employment in India in that grade, be entitled to retire upon a pension of £250 per annum, in addition to the pension to which he may be entitled under the above scale.

33. In each of the above cases stated in paras. 31 and 32, six months' absence on medical certificate will be allowed to count towards actual service in those grades.

34. A Surgeon-General or Deputy Surgeon-General who has completed his term of service and has reverted to British pay, may reside in Europe, at the same time qualifying for higher pension.

35. With a view to maintain the efficiency of the service, all medical officers of the rank of Surgeon-Major shall be placed on the Retired List when they shall have attained the age of fifty-five years, and all Surgeons-General and Deputy Surgeons-General when they shall have attained the age of sixty-five years. In any special case, where it would appear to be for the good of the ser-

vice that the officer should continue in employment, he may be so continued, subject in each case to the sanction of the Secretary of State for India in Council.

36. A medical officer retiring after a service of twenty-five years and upwards may, if recommended for the same by the Government of his Presidency, receive a step of honorary rank, but without any consequent increase of pay.

37. Officers compelled to leave the service on account of ill-health, and not entitled to full-pay pension under present regulations, will be allowed the half-pay of their relative rank, as laid down in the Royal Warrant of 10th May 1873:—Surgeon-Major of twenty years' service, ranking with Lieutenant-Colonel, 11s. per day; Surgeon-Major, ranking with Major, 9s. 6d. per day; Surgeon, ranking with Captain, 7s. per day; Surgeon under six years' service, ranking with Lieutenant, 4s. per day; Surgeon under three years' service, ranking with Lieutenant, 2s. 6d. per day. Officers cannot retire *in India* on half-pay (No. 54, 28th February 1865).

38. *Wound Pensions*.—Medical officers are entitled to the same allowances granted to Her Majesty's Indian Military Forces on account of wounds and injuries received in action as combatant officers holding the same relative rank.

39. *Family Pensions*.—The claims to pension of widows and families of medical officers shall be treated under the provisions of such Royal Warrant regulating the grant of pensions to the widows and families of British officers as may be in force at the time being. (The Royal Warrant of 1st May 1878 is the one now in force.)

40. The widows and families of medical officers are also entitled to pensions from the Indian Service Family Pension Fund, to which all Surgeons must, as a condition of their appointment, subscribe from the date of their arrival in India.

NAVY MEDICAL DEPARTMENT.

Admiralty, 9 New Street, Spring Gardens, London, S. W.

REGULATIONS RELATIVE TO THE EXAMINATION OF CANDIDATES FOR COMMISSIONS IN THE MEDICAL SERVICE OF THE ROYAL NAVY.

Candidates for admission to the Naval Medical Service must subscribe and send to the Medical Department, Admiralty, proofs of their qualifications, etc., similar to those required by the Army Medical Department. The regulations and subjects for examination are also similar.

After passing the examination, every candidate will be required to attend one entire course of practical instruction in the Medical School at Netley, on—(1) Hygiene; (2) Clinical and Naval and Military Medicine; (3) Clinical and Naval and Military Surgery; (4) Pathology of Diseases and Injuries incidental to Naval and Military Service.

At its conclusion the candidate will be required to pass an examination on the subjects taught in the School. If he give satisfactory evidence of being qualified for the practical duties of a Naval Medical Officer, he will be eligible for a commission as Surgeon.

During the period of his residence at the Netley Medical School, each candidate will receive an allowance of 8s. per diem with quarters, to cover all cost of maintenance; and he will be required to provide himself with uniform—viz., the regulation undress uniform of a Surgeon, but without the sword.

The full and half pay of Naval Medical Officers is in accordance with the following scale:—Full-pay: Inspector-General of Hospitals and Fleets—On promotion or under twenty-five years' service, £2, 5s.; ditto or above twenty-five years' service, £2, 6s.; and for each additional year of service 1s. a day more until the maximum is reached—namely, £2, 10s. Deputy Inspector-General of Hospitals and Fleets. On promotion or under twenty-two years' service, £1, 11s.; ditto or above twenty-two years' service, £1, 12s.; and for

each additional year of service 1s. a day more until the maximum is reached—namely, £1. 18s. Fleet Surgeon—On promotion or under twenty years' service, £1. 3s.; ditto or above twenty years' service, £1. 4s.; and for each additional year of service 1s. a day more until the maximum is reached—namely, £1. 10s. Staff Surgeon—On promotion or under fourteen years' service, 18s.; ditto or under seventeen years' service, £1; and for each additional year of service 1s. a day more until the maximum is reached—namely, £1. 2s. Surgeon—Under five years' service, 11s.; under eight years' service, 12s. 6d.; under eleven years' service, 14s.; under fourteen years' service, provided he passed his examination for Staff Surgeon while under ten years' service, 15s. 6d.; above fourteen years' service, ditto, 17s. Half-pay: Surgeon—Under five years' service, 6s.; under eight years' service, 8s.; under eleven years' service, 10s.; above eleven years' service, provided he passed his examination for Staff Surgeon while under ten years' service, 11s. Staff Surgeon—On promotion or under fourteen years' service, 11s.; ditto or under seventeen years' service, 13s.; ditto or above seventeen years' service, 14s. Fleet Surgeon—On promotion or under twenty years' service, 16s.; ditto or above twenty years' service, 16s. 6d.; and for each additional year of service 6d. a day more until the maximum is reached—namely, 18s. 6d. Deputy Inspector-General of Hospitals and Fleets—On promotion or under twenty-two years' service, £1. 1s.; ditto or above twenty-two years' service, £1. 2s.; and for each additional year of service 1s. a day more until the maximum is reached—namely, £1. 7s. Inspector-General of Hospitals and Fleets—On promotion or under twenty-five years' service, £1. 11s.; ditto or above twenty-five years' service, £1. 12s.; and for each additional year of service 1s. a day more until the maximum is reached—namely, £1. 18s.

PRELIMINARY EXAMINATIONS for the DIPLOMAS of the ROYAL COLLEGES of PHYSICIANS and SURGEONS of EDINBURGH, during the Year 1880–81.

1. The *Preliminary Examination in General Education* for the Double Qualification in Medicine and in Surgery conferred conjointly by the Royal Colleges of Physicians and Surgeons, and also for the separate Diploma of each College, for 1880–81, will embrace the following subjects:—

1. *English Language*, including Grammar and Composition.
2. *Arithmetic*, including Vulgar and Decimal Fractions.
3. *Algebra*, including Simple Equations.
4. *Geometry*; First Two Books of Euclid.
5. *Latin*; Cicero de Naturâ Deorum; Virgil, *Æneid*, Book II.
6. One of the following subjects at the option of the candidate: (1.) *Greek*; (2.) *French*; (3.) *German*; (4.) *Natural Philosophy*, including Mechanics, Hydrostatics, and Pneumatics.

II. In *Latin*, besides translation from one of the books above prescribed, the examination will include grammar, translation of a passage from an unprescribed author, and translation of a passage from English into Latin, the more difficult words being supplied.

In *Greek*, the books prescribed are, Xenophon's *Anabasis*, Book III., and Homer's *Iliad*, Book III. Besides translation from both these, parsing, derivation of English words from Greek, and translation of a passage from English into Greek are required.

In *French*, the book prescribed is Molière, *Les Femmes Savantes*. Parsing and translation from English into French are also required.

In *German*, the book prescribed is Schiller's *Maria Stuart*. Parsing and translation from English into German are also required.

Natural Philosophy, as defined above, corresponds to *Mechanics* in the preliminary examination of the University of Edinburgh.

III. The examinations will be held in the Hall of the Royal College of Physicians, 9 Queen Street, on the following days, beginning each day at twelve o'clock:—Saturday, 16th October, and Monday, 18th October, 1880; Tuesday, 12th April, and Wednesday, 13th April, 1881; and Saturday, 9th July, and Monday, 11th July, 1881. On each occasion the subjects of the first day's examination will consist of English, Latin, and Geometry; and those of the second day, of Arithmetic, Algebra, and the optional subjects.

Each candidate shall pay a fee of ten shillings previous to the examination. And in the event of his being unsuccessful, he shall pay a fee of Five Shillings for each subsequent examination at which he is present.

Candidates are required to give their names and pay their fees to the officer of the Royal College of Physicians not less than two days prior to the day of the examination. Candidates at a distance should send their fees by post-office order, which should be made payable to John Broome, officer, Royal College of Physicians, Edinburgh.

IV. The examinations will be conducted according to the following regulations:—

1. The competence of the candidate will be ascertained by means of written exercises. Candidates whose success amounts to a certain minimum will be admitted.

2. Each candidate must fill up a form (to be obtained from the officer) giving his name, place of birth, and an address that will find him by post, distinctly written on it, and specifying the subjects in which he wishes to be examined.

3. The exercises on each of the subjects must, in every case, be written on separate papers; and the candidate must attach his signature to each sheet of his written paper, and on the outside when folded, before giving it in to those who superintend the examination.

4. Books must not be employed, nor may assistance be given by one candidate to another, during the examination. Those who violate this rule shall forfeit the right to a certificate.

5. The decision of the examiners will be intimated to each candidate as soon as possible. Those who pass the examination will receive certificates to that effect. In the case of those who are successful in part of the examination only, the subjects in which they have passed will be recorded, and they will not be again examined in the branch or branches in which they have been successful.

V. A certificate of having passed all the required subjects of the above examination entitles the possessor, on commencing Medical Study, to be registered as a Medical Student in the form required by the regulations of the General Medical Council, and, provided the candidate passes in three books of Euclid, is also admitted *pro tanto* by the Medical Faculty of the University of Edinburgh as an equivalent for the corresponding subjects of their preliminary examination for intending Graduates in Medicine.

A list of Examining Boards in the United Kingdom and in the Colonies, whose certificates are received *pro tanto* by the Royal Colleges, on the recommendation of the General Medical Council, will be found in the Appendix to the Regulations of the Colleges.

DANIEL RUTHERFORD HALDANE, *President Royal College of Physicians*

FRANCIS BRODIE IMLACH, *President Royal College of Surgeons.*

EDINBURGH, 1st July 1880.

Frequent inquiries having been made as to the exact nature of the Preliminary Examination for the Diplomas of the Royal Colleges of Physicians and Surgeons of Edinburgh, the Secretaries have supplied the following papers, which were given out at the examinations in 1880:—

ENGLISH.

The candidate is required:—

1. To write a passage dictated by the examiner, with strict attention to spelling and punctuation.

2. To give the meaning and derivation of at least eight of the following words:—

Transference, Apparition, Subject, Performance, Controversy, Direction, Important, Fugitive, Consolation, Destruction, Eulogy, Triumvirate.

3. To give a grammatical analysis of the following sentence:—

"I may indeed venture to hope that such readers, if they follow me with no unkindly spirit through these pages, may find considerations of real weight and importance, which will solve imaginary difficulties and supply an answer to real objections."

4. To write a short essay on the following subject:—

"Iron, and its useful applications." (The chemistry of the subject not expected.)

[The essay need not exceed half a folio page.]

FRENCH.

Translate into English:—

Ariste.

Allez, c'est se moquer. Votre femme, entre nous,
Est, pas vos lâchetés, souveraine sur vous.
Son pouvoir n'est fondé que sur votre faiblesse;
C'est de vous qu'elle prend le titre de maîtresse;
Vous-même à ses hauteurs vous vous abandonnez,
Et vous faites mener en bête par le nez.
Quoi! vous ne pouvez pas, voyant comme on vous nomme,
Vous résoudre une fois à vouloir être un homme,
A faire condescendre une femme à vos vœux,
Et prendre assez de cœur pour dire un Je le veux!
Vous laisserez, sans honte, immoler votre fille
Aux folles visions qui tiennent la famille,
Et de tout votre bien revêtir un nigaud,
Pour six mots de latin qu'il leur fait sonner haut;
Un pédant qu'à tout coup votre femme apostrophe
Du nom de bel esprit et de grand philosophe,
D'homme qu'en vers galans jamais on n'égalait,
Et qui n'est, comme on sait, rien moins que tout cela!
Allez, encore un coup, c'est une moquerie,
Et votre lâcheté mérite qu'on en rie.

Chrysale.

Oui, vous avez raison, et je vois que j'ai tort.
Allons, il faut enfin montrer un cœur plus fort,
Mon frère.

2. Conjugate the following verbs: *prendre, voir, vouloir, condescendre, tenir, savoir.*

3. Write out in full the imperative of *se résoudre*.

4. Give the feminine of *gargon, gendre, neveu, cheval, âne, cochon, taureau, coq.*

5. Translate into French:

The simplicity of this rural (*champêtre*) life did me a good of inestimable price, in opening my heart to friendship. Till then I had only known sentiments elevated, but imaginary. The custom of living together in a peaceful state united me tenderly to my cousin William. In a short time I had for him sentiments more affectionate than those which I had had for my brother, and which have never been effaced.

GERMAN.

1. Translate into English :—

Maria (mit ruhiger Hoheit im ganzen Kreise herumschend).

Was klagt ihr? Warum weint ihr? Freuen solltet

Ihr euch mit mir, dass meiner Leiden Ziel

Nun endlich naht, dass meine Bande fallen,

Mein Kerker aufgeht, und die frohe Seele sich

Aus Engelsflügeln schwingt zur ew'gen Freiheit.

Da, als ich, in die Macht der stolzen Feindin

Gegeben war, Unwürdiges erdulnd,

Was einer freien, grossen Königin

Nicht ziemt, da war es Zeit, um mich zu weinen!

Wohlthätig, heilend naht mir der Tod,

Der ernste Freund! Mit seinen schwarzen Flügeln

Bedeckt er meine Schmach—Den Menschen adelt,

Den tiefstgesunkenen, das letzte Schicksal.

Die Krone fühl' ich weider auf dem Haupt,

Den würd'gen Stolz in meiner edeln Seele!

(Indem sie einige Schritte weiter vortritt.)

Wie? Melvil hier?—Nicht also, edler Sir?

Steht auf! Ihr seid zu eurer Königin

Triumph, zu ihrem Tode nicht gekommen.

2. Give the principal parts (first person singular present and imperfect indicative, and past participle) of *fallen*, *aufgeht*, *schwingt*, *vortritt*, *gekommen*.

3. Decline throughout, *sein schwarze Flügel*.

4. Translate into German:

What o'clock is it? It is late, it is ten o'clock. It is fine weather to-day. It has frozen (*froren*) last night. It was very slippery (*glatt*); a man fell and has broken his leg (*Bein*). What is to be done? Send for the doctor.

GREEK.

I. Translate :—

(*Xenophon, Book III.*)

Ἐνταῦθα ἔμειναν ἡμέρας τρεῖς, καὶ τῶν τερωμένων ἕνεκα, καὶ ἅμα ἐπιτήδεια πολλὰ εἶχον, ἄλευρα, οἶνον, κριθὰς ἵπποις συμβεβλημένας πολλὰς. ταῦτα δὲ συνηγμένα ἦν τῷ σατραπεύοντι τῆς χώρας. τετάρτῃ δ' ἡμέρᾳ καταβάνουσιν εἰς τὸ πεδῖον. Ἐπεὶ δὲ κατέλαβεν αὐτοὺς Τισσαφέρνης σὺν τῇ δυνάμει, εἰδὼς τοὺς Ἕλληνας τῇ ἀνάγκῃ κατασκηνησάσθαι, οὐ πρῶτον εἶδον κώμην, καὶ μὴ πορεύεσθαι ἔτι μαχομένους. πολλοὶ γὰρ ἦσαν ἀπόμαχοί, οἱ τετρωμένοι, καὶ οἱ ἐκείνους φέροντες, καὶ οἱ τῶν φερόντων τὰ ὄπλα δεξάμενοι. Ἐπεὶ δὲ κατεσκήνησαν, καὶ ἐπεχείρησαν αὐτοῖς ἀκροβολίζεσθαι οἱ βάρβαροι πρὸς τὴν κώμην προσιόντες, πολὺ περιῆσαν οἱ Ἕλληνες. πολὺ γὰρ διέφερον, ἐκ τῆς χάσας ὁρμώσας ἀλλεῖσθαι, ἢ πορευομένους ἐπισπῆσι τοῖς πολέμοις μάχεσθαι. Ἦν δ' ἦν ἡδὴ δέλη, ὥρα ἦν ἀπιέναι τοῖς πολεμοῖς. οὐ ποτε γὰρ μείον ἀπεστρατοπεδεύοντο οἱ βάρβαροι τοῦ Ἑλληνικοῦ ἐξήκοντα σταδίων, φοβούμενοι μὴ τῆς νυκτὸς [οἱ Ἕλληνες] ἐπιθοῖντο αὐτοῖς.

Parse *ἔμειναν*. Parse *τετρωμένων*. Parse *ἄλευρα*; from what verb is it derived? Parse *συμβεβλημένος*. Parse *συνηγμένα*; give the first person singular of the second aorist active of this verb. Decline *ἡμέρα* in the singular, dual, and plural. What English word comes from it? Parse *δυνάμει*. What English words are derived from it? Parse *ἀκροβολίζεσθαι*; give its derivation. Parse *μείον*. Parse *ἐπιθοῖντο*.

II. Translate :—

(*Iliad, Book II.*)

Ὡς φάτο, νεικέων Ἀγαμέμνονα, ποιμένα λαῶν,
Οερσίτης· τῷ δ' ὦκα παρίστατο δῖος Ὀδυσσεὺς.
Καὶ μιν ὑπὸ δόρα ἰδὼν χαλεπῷ ἠνίπαπε μῦθῳ.

Οερσίτ' ἀκρίτῳ μινθε, λιγύς περ ἐὼν ἀγορητής,
Ἰσχυο, μῆδ' ἐθέλ' ὅλος ἐριζέμεναι βασιλεῦσιν·
Ὅν γὰρ ἐγὼ σέο φημί χειρίτερον βροτῶν ἄλλων

Ἑμμεναι, ὅσσοι ἄμ' Ἀτρείδης ὑπὸ Ἴλιον ἦλθον·
 Τῷ οὐκ ἂν βασιλῆας ἀνὰ στόμ' ἔχων ἀγορεύοις,
 Καὶ σφιν ὀνειδέα τε προφέροις, νόστον τε φυλάσσοις,
 Οὐδέ τί πω σάφα ἴδμεν, ὅπως ἔσται τάδε ἔργα·
 Ἥ εὖ, ἢ κακῶς, νοστήσομεν νῆες Ἀχαιῶν.
 Τῷ, νῦν Ἀτρείδῃ Ἀγαμέμνονι, ποιμένι λαῶν,
 Ἦσαι ὀνειδίζων, ὅτι οἱ μάλα πολλὰ διδοῦσιν
 Ἥρωες Δαναοί· σὺ δὲ κερτομέων ἀγορεύεις.

Parse *νεκείων*. Parse *ἀκριτόνυθε*; give its derivation. Parse *ἴδμεν*. Parse *κακῶς*; give the corresponding adjective, and compare it. Parse *νοστήσομεν*. Compare *μάλα*. Parse and compare *πολλὰ*. Parse *ἀγορεύεις*.

III. Render into Greek the following English passage :

A dog, carrying meat, was crossing a river. Seeing his own shadow (*σκιά*) on the water, he supposed (*ὑπολαμβάνω*) that it was another dog also carrying (*κατεχω*) meat; and, letting go (*αφείς*) his own, he thought (*ορμῶ*) to take that of the other dog, but lost both.

IV. Give the Greek derivation of the following English words :

Dipsomania, Kleptomania, and Monomania; Zoophyte, Neophyte, Strategy, Economy, Anabaptist, Pædo-baptist, Phonograph, Telephon, Lairy, Polytechnic, Panorama, Epitaph, Epigram, Epithet.

[The Candidate, in order to pass, must do all these numbers, and obtain 75 per cent. marks.]

ARITHMETIC.

The full work of every question must be given.

1. Calculate to 5 places of decimals the values of

$$1 + \frac{1}{2} + \frac{1}{2.3} + \frac{1}{2.3.4} + \frac{1}{2.3.4.5} + \frac{1}{2.3.4.5.6};$$

and of the square root of 0.8.

2. Find the values of $\frac{1\frac{1}{2}}{\frac{7}{6}}$ of $1\frac{2}{3}$ and $\frac{0.08}{1.2}$.

3. How many days from July 14th to October 27th, both inclusive?

4. What sum will increase by £100 in 3 years at 5 per cent. compound interest?

5. A man sells 3 per cents. at 81, and invests the proceeds in $3\frac{1}{2}$ per cents. at 92. What is the percentage alteration of his income from the money?

6. A grocer buys two kinds of tea, one at 2s., the other at 2s. 6d. per pound. In what proportion must he mix them, so as to realize 20 per cent. profit by selling at 2s. 9d.?

7. Allowing 64 lbs. of water to a cubic foot, what is the weight of the contents of a bath 70 in. \times 37 in. filled to a depth of 19 inches?

8. Show that any integral number of pounds up to 121 can be weighed by means of the five weights, 1, 3, 9, 27, and 81 lbs.

ALGEBRA.

The full work of every question must be given.

1. Find the values of :

$$\frac{(ly - mx)^2 + (mz - ny)^2 + (nx - lz)^2 + (lx + my + nz)^2}{l^2 + m^2 + n^2},$$

$$\text{and } (x + y + z)(x - y + z)(x + y - z)(-x + y + z),$$

in their simplest forms.

2. Find the factors of $x^2 + \frac{1}{x^2} - \left(a + \frac{1}{a}\right)$.
3. Divide $1 - 3x^3 + 3x^6 - x^9$ by $1 - 2x + x^2$.
4. Extract the square root of $(1 + x^8) + 2x(1 + x^6) + 3x^2(1 + x^4) + 4x^3(1 + x^2) + 5x^4$.
5. Solve the equations:
 - (a) $\frac{x-3}{2x-1} \cdot \frac{1+2a}{3+a} = 1$.
 - (β) $(x+5)^2 - (6-x)^2 = 33$.
 - (γ) $(1+x+x^2)^2 - (1-x+x^2)^2 = 10(x^2+1)$.

6. One pipe can fill a water-barrel in an hour, another can fill it in two hours. The barrel is placed under the first for a certain time, then under the second for an equal time, then under both for the same time, and is filled. What is that time?

7. A, B, and C have each the same number of nuts. A gives B half of his and five more; B then gives C half of what he has and 10 more; C gives A half of what he has and 15 more. Then A has three times as many as at first. How many had each, and how many has he?

NATURAL PHILOSOPHY.

1. What is meant by velocity, and how is it measured? Taking the earth's radius as 4000 miles, what is the velocity of bodies at the equator in consequence of the diurnal rotation?

2. Explain the action of a hydraulic press.

3. If a stone be let fall, and three seconds afterwards another be thrown down with a velocity of 100 feet per second, when will it overtake the first?

4. Describe one form of Hydrometer, explain its use, and show how it can be graduated.

5. Why is greater pressure required to burst a small boiler than a large one of the same shape, both being made of the same boiler-plate? Give other illustrations of the same principle.

6. Enunciate the proposition called the "Parallelogram of Forces," and give a satisfactory proof of it.

7. A uniform force stops a train in one minute, and during that time the train runs 300 yards, what was the velocity of the train; and what ratio does the force bear to the weight of the train?

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

AMANTHA MUSCARIA IN THE TREATMENT OF THE NIGHT-SWEATING OF PHTHISIS. By Dr William Murrell.—For the last six months I have used the *Agaricus muscarius* in the treatment of the night-sweating of phthisis. The preparation employed was a one per cent. solution of a liquid extract, of about the consistence of treacle, which was kindly placed at my disposal by Dr Ringer. The extract was, I understand, made in England from fungi

obtained from Germany. I have treated in all twenty-six cases—sixteen men and ten women, their ages ranging from forty-six to ten. They were all out-patients, and all were phthical, many of them having cavities. In almost every instance the sweating was very profuse, none but well-marked cases being chosen. It was found that five minims of the one per cent. solution of the extract was the smallest dose on which reliance could be placed, although in some instances smaller quantities succeeded. It was usually given in a little water three times a day, but it answers well if given only at bed-time. A good plan is to give the three doses during the night, or at intervals of about an hour before going to bed. There is usually no improvement on the first night, but on the second or third nights the sweating is distinctly less, and by the end of the week has ceased, or is at all events so slight as not to put the patient to any inconvenience. In most cases the muscarius alone was given, but in a few instances the ordinary treatment was continued. It stops the sweating without the production of any abnormal dryness of the skin. The medicine is almost tasteless, and is taken without difficulty. One patient complained that it would not keep, and went bad before the end of the week. The addition of a few drops of spirit overcame that difficulty. There is no danger in taking the medicine, for a delicate young woman of twenty-three took fifteen minims every three hours for a week, and then twenty minims every three hours for another week, without the production of any symptoms.—*The Practitioner*, August 1880.

THE TREATMENT OF PERSPIRATION OF THE FEET.—Dr Ortega (*Le Matricien*) advocates a solution of chloral in this affection. A patient of his, a strong man working in an ice manufactory, suffered from it in an extreme degree—so much so that his fellow-workmen would not work by his side. The epidermis of the sole of the feet was white, as if macerated; there were small ulcerations in the furrows and also around the nails. The odour was overpowering. Dr Ortega prescribed baths of a solution of chloral, 1 in 50, and wrapping the feet in a cloth dipped in a similar solution. Two days after the smell had disappeared. Six days later, the treatment being continued, the ulcerations were less moist, and covered with a layer of epidermis.—*Medical Press and Circular*, August 18, 1880.

OXALATE OF CERIUM—ITS VALUE IN RELIEVING COUGH.—Dr H. Cheesman (*Medical Record*, June 12, 1880) concludes the details of recent observations on the use of oxalate of cerium for the relief of cough thus:—(1.) Cerium oxalate may be given safely in doses of 10 grains or more three times a day for many days in succession. (2.) The only symptom noted from such doses is a slight dryness of the mouth for the first few days. (3.) It is probably more efficient when taken dry upon the tongue. (4.) Its effects are not

fully apparent until it has been taken two or three days, and continue about the same length of time after its use is suspended. (5.) For chronic cough it is best taken on an empty stomach, early in the morning and at bedtime, with other doses during the day if required, the initial dose for an adult being 5 grains. (6.) It is in the majority of cases an efficient cough medicine, at least for a considerable time, and it is very valuable as an alternate with other drugs used for that purpose. (7.) It does not disturb the stomach, as do opiates and most other cough remedies, but, on the contrary, it tends to relieve nausea and to improve digestion. (8.) The different preparations in the market are not of equal value, and when success is not obtained with one, another should be substituted.—*The Detroit Lancet*, August 1880.

CARBOLIZED CAMPHOR IN DIPHTHERIA.—In the treatment of diphtheria Dr Peraté has for the last two years employed carbolized camphor. He applies it by means of a brush soaked in the following solution:—Phenol (carbolic acid), 9 grammes; camphor, 25 grammes; alcohol, 1 gramme; diluted with an equal quantity of almond oil. The applications are made at first every two hours during the day and every three hours during the night, and the interval between them is gradually increased. The application is made over the whole of the false membrane, and in refractory children the brush is plunged well to the back of the throat. The taste of the mixture is very disagreeable, but patients soon become accustomed to it.—*Medical Press and Circular*, August 11, 1880.

BROMIDE OF ETHYL.—M. Terrillon communicated to the *Société de Chirurgie* his experiences of bromide of ethyl. He had already employed it a dozen times, and in every case he saw produced a white spot after one or two minutes, indicating anaesthesia of the skin. The pain was *nil*. The white spot was not indispensable, but he always remarked it.—*American Practitioner*, July 1880.

BENZOATE OF SODA IN PARASITIC DISEASES.—This substance is greatly vaunted in Germany as a specific against parasitic diseases, among which are ranked pneumonia and pulmonary tuberculosis. Rokitsansky makes his patients inhale, by means of a spray apparatus, a grain of the drug for each kilogram bodily weight. Schwitzler, also partisan of the anti-parasitic treatment of phthisis, gives preference to inhalations and subcutaneous injections of phenic acid. Klebs, of Prague, signals the efficacy of benzoate of soda in all febrile diseases having an infectious character. The fever does not yield as quickly as with quinine or salicylate of soda, but it disappears in a more certain and permanent manner. Letzerich recommends it in the treatment of diphtheria. Upon twenty-seven patients treated during an epidemic, he affirms to have lost but one, and that a child. In these cases the benzoate of soda is employed internally, the dose

being from five to twenty grains, according to age, in about six ounces of vehicle, and externally in powder applied to the affected parts.—*The American Practitioner*, July 1880.

PERISCOPE OF OTOTOLOGY.

By Dr KIRK DUNCANSON, Surgeon to the Ear Dispensary, 6 Cambridge Street; Assistant-Surgeon, Eye Infirmary; Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

THE following two tables are a tabulated list of the diseases of the ear met with at the Ear Dispensary, 6 Cambridge Street, Lothian Road, during the two years July 1878 to end of June 1880. They give the names usually applied to the chief features observed in each case; of course, other symptoms and complications, giving rise to the deafness or other complaint, were met with, and had to be treated accordingly. In dispensary work, where many patients have to be seen and treated in a limited space of time, the notes taken are sometimes so imperfect that it is somewhat difficult to arrange them under their respective heads; still the undernoted are the leading features of the several diseases for the two years. I have also appended a list of the decennial ages of the patients so far as recorded. I take this opportunity of thanking for much valuable help in the work of the Dispensary, Drs More Reid and Oliver, and Mr John F. Thomson, third year's student of medicine, as well as Mr Gregor for aiding us in keeping the books and writing out the prescriptions.

July 1878 to end of June 1879.

DISEASES OF THE EXTERNAL EAR.

Abscess of mastoid process (idiopathic),	1
Adenitis,	5
Eczema,	7
Periostitis of mastoid process,	2
Deafness and pain of left auricle arising from paralysis of 7th nerve,	1

DISEASES OF THE NASO-PHARYNX.

Acute pharyngitis,	2
Chronic do.,	8
Thickening and swelling of mucous membrane of nostrils,	1

DISEASES OF THE EXTERNAL AUDITORY MEATUS.

Eczema,	4
Foreign bodies,	6
Furuncular abscesses,	4
Diffuse inflammation,	4
Inflammation with necrosis of mastoid process,	1

Inflammation with necrosis of mastoid process, with inflammation of temporo-maxillary articulation, . . .	1
Strumous inflammation from otorrhœal discharge, . . .	12
Wax (ceruminosis obturans), . . .	100
Laminated epithelial plug (keratosis obturans), . . .	4
Tumours—	
(a) Cystic, . . .	1
(b) Exostosis (pedunculated), . . .	1

DISEASES OF THE MIDDLE EAR.

Acute catarrhal inflammation, . . .	1
Subacute do. do., . . .	44
Chronic do. do., . . .	104
Cicatrix of membrana tympani, . . .	7
Acute myringitis, . . .	2
Chronic do., . . .	3
Dry perforation of membrana tympani, . . .	3
Acute suppurative inflammation with perforation, . . .	1
Chronic do. do., . . .	84
Polypi, . . .	17
Suppurative inflammation with disease of mastoid process, . . .	2
Calcareous deposits in membrana tympani, . . .	5
Tinnitus aurium, . . .	3
Closure of the faucial opening of Eustachian tube, . . .	4
Syphilitic disease, . . .	4

DISEASES OF THE INNER EAR.

Deaf-muteism, . . .	7
Diseases of the labyrinth (both from congenital syphilis), . . .	2
Otalgia, . . .	2
Of the patients under 1 year of age there were . . .	3
Do. from 1—10, . . .	63
Do. " 10—20, . . .	91
Do. " 21—30, . . .	93
Do. " 31—40, . . .	60
Do. " 41—50, . . .	35
Do. " 51—60, . . .	22
Do. " 61—70, . . .	21
Do. " 71—80, . . .	5

July 1879 to end of June 1880.

DISEASES OF THE EXTERNAL EAR.

Abscess, . . .	1
Do. of mastoid process (idiopathic), . . .	1
Adenitis, . . .	1
Eczema, . . .	6
Periostitis of mastoid process (idiopathic), . . .	3

DISEASES OF THE NASO-PHARYNX.

Ozæna,	3
Naso-pharyngitis,	2
Chronic pharyngitis,	27
Ulcerative do.,	2

DISEASES OF THE EXTERNAL AUDITORY MEATUS.

Eczema,	5
Epithelioma,	1
Foreign bodies,	5
Furuncular abscess,	8
Diffuse inflammation,	6
Inflammation with necrosis of mastoid process,	1
Desquamative inflammation,	1
Wax (ceruminosis obturans),	108
Laminated epithelial plug (keratosis obturans),	6
Fibroid tumour,	1

DISEASES OF THE MIDDLE EAR.

Acute catarrhal inflammation,	3
Subacute do.,	32
Chronic do.,	104
Cicatrix of membrana tympani,	6
Chronic myringitis,	4
Dry perforation of membrana tympani,	7
Acute suppurative inflammation with perforation,	3
Chronic do. do.,	126
Polypus,	22
Suppurative inflammation with necrosis,	3
Do. do. disease of mastoid process,	3
Chalky deposits in membrana tympani,	6
Tinnitus aurium,	13

DISEASES OF THE INNER EAR.

Deaf-muteism,	2
Disease of the labyrinth,	1
Otalgia,	2

Of the patients there were from 1 to 10 years,	56
Do. " 11—20 "	109
Do. " 21—30 "	103
Do. " 31—40 "	58
Do. " 41—50 "	49
Do. " 51—60 "	22
Do. " 61—70 "	21
Do. " 71—80 "	5

PERISCOPE OF SYPHILOLOGY.

By FRANCIS CADELL, F.R.C.S.E.

TREATMENT OF SYPHILIS.—In an inaugural lecture at the Hôpital Saint-Louis, Dr Fournier defined syphilis to be “a diathetic malady, resulting from the absorption of a particular virus which is contagious and hereditary, essentially chronic, revealing itself by certain manifestations which are subject to a certain chronological order. It is a malady imported into the system, and the result of the accidental introduction of a principle foreign to the body; it is essentially a specific disease.” On referring to the treatment of syphilis, he said that it was evident that a malady so terrible in its consequences and so prolonged in its course required a treatment proportionally energetic. To abandon such a malady to itself, he added, is an idea which germinated in the minds of certain individuals; but pure expectation has shown its results: it is very properly condemned by the profession. Moreover, experience has shown that as the malady is specific, the treatment should also be specific; and the only remedy which up to the present time can claim to be a specific for this particular malady is, decidedly, mercury. The specific remedy in the malady under notice should be continued for at least two years.

Dr Desprès, surgeon to the Hôpital Cochin, entertains other views than those enunciated above as being the classical treatment for syphilis—views equally founded on long experience and in almost similar circumstances to those in which the eminent physician named in the preceding paragraph acquired his experience. According to Dr Desprès, mercury, the so-called specific, is not only useless, but positively dangerous. The malady runs through a course extending to eighteen months or two years; and this it does whether mercury be administered or not. The advantage, however, is on the side of the non-mercurial treatment, as it does not produce the so-called tertiary symptoms, which Dr Desprès looks upon, not as the natural sequence of the disease, but as the result of the abusive administration of the otherwise most useful drug called mercury. Dr Desprès’ treatment consists, first, in the administration of general tonics, and of ferruginous preparations later on; and if he administers mercury at all, it is in the form of the iodide of mercury, the least dangerous of all the mercurial preparations, as it contains but a small proportion of the drug. In his practice, now extending to nearly twenty years, he asserts that he has never met with a single case of the tertiary lesions of syphilis in which the non-mercurial treatment was adopted; and it is this treatment he has always carried out in his private as well as in his hospital practice.—*British Medical Journal*, 26th June 1880.

BRAIN SYPHILIS.—Dr G. L. Peabody related the histories of two

cases to a meeting of the New York Clinical Society. The first was that of an Italian woman, who was almost comatose when brought into the New York Hospital, and who lived but eight hours after admission, yet had been well until two days previous. At the autopsy he had found, at the posterior part of the left parietal bone, an elliptical loss of substance, of about three by two inches, involving the inner and in part the outer table. There was no dura mater, and the pia mater was infiltrated with pus, especially over the vertex. There was also abscess of the brain at the depth of an inch and a half. There was found a croupous exudation in the larynx and trachea. The second case was that of a man who had suffered from headaches and loss of memory, with periods of semi-unconsciousness. He had paralysis of the facial muscles on the left side, and partial paralysis of the extremities on the right side. Lesions of the arteries were found at the base of the brain, and the left vertebral was thickened. The walls of the basilar artery also were thickened, and this vessel was the seat of a thrombus filling its anterior half. This thickening involved the endothelium, and was made up of a material like that of gummata. The pia mater was also thickened at the vertex and over the commissure. Between the pituitary body and the internal carotid was a thickened mass composed of material such as is found in gummy deposits.—*New York Medical Journal*, February 1880.

Part Fifth.

MEDICAL NEWS.

THE work of Dr W. W. Ireland, of the Scottish National Institution at Larbert, on Idiocy and Imbecility, has been translated into Russian by Dr Tomaszewski, with a preface by Professor Mierzejewski, of the Medico-Chirurgical Academy of St Petersburg. At the same time, the Medico-Psychological Society of St Petersburg has conferred on Dr Ireland the diploma of Corresponding Member of their body.

WHAT IS LEFT FOR THE GENERAL PRACTITIONER? — Dr A. Jacobi says that the general practitioner will in future obtain, as the legitimate province of his practice, the male half of mankind and very old women and very young children, provided he will keep his hands off their eyes, ears, nervous system, lungs, heart, urinary organs, venereal diseases, nose, larynx, skin, hair, and corns.—*Louisville Med. News*, June 26th.

OBITUARY.

JOHN SIME COWAN, M.D., DUNBAR.

By the death of Dr Cowan the south of Scotland has lost one of its ablest practitioners, and the profession in general has been bereft of one of its brightest lights. John Sime Cowan, a native of Rattray, in Perthshire, after a full literary and medical course, graduated as M.B. and C.M. of Edinburgh University in 1871. After leaving college, he was engaged for some years in travel, at times acting as surgeon to steamships. In this way he saw a great part of the world, both of India and America, and this gave breadth to his views of things in general. After having managed a branch practice at Prestonpans, in 1876-77, for Dr Thomas Scott, junr., of Musselburgh, he in the summer of 1877 acquired the practice of Dr David James of Dunbar by purchase. Here he rapidly acquired great popularity, and for the last three years has been a hard-working practitioner of medicine. For some time his health was exceedingly good; but the loss of a favourite infant and the serious illness of his wife seem to have affected him very much, and during this spring an attack of rheumatic fever further weakened him. Mitral mischief was set up, and he had at various times a feeling of impending death. To the writer of this notice he expressed himself as likely to die soon, a short week before his death. On Tuesday, August 24, he had been in his usual health, and after doing his ordinary country work he went out to listen to the music of the Northumberland Militia Band (at that time stationed in Dunbar) pretty late in the evening. On coming home he ate a hearty supper, and was in his room getting a book to read while he smoked his evening pipe. His wife suddenly heard a heavy fall, and found him lying forward on the wash-stand. With assistance she got him over the floor to his bed, and then a slight movement of the breath and all was over with poor Jack Cowan. The inhibitory action of the vagus had been called into play by the supper he had eaten, and the weak heart succumbed—the wheel was broken at the cistern.

John Cowan was a genius in every sense of the word. He was not only a most energetic medical practitioner, but thoroughly understood the theory of his work. As a diagnostician few could compete with him, and his knowledge of both medical and surgical therapeutics was accurate, and always ready for application in practice. It was more, however, as a scholar, as a highly-cultured gentleman, that Dr Cowan excelled. Having had the advantage of taking the Arts course, his mind had been greatly fascinated with philosophy and literature. He was an excellent linguist, and his extensive travels had given him a wide and noble view of man as found everywhere. He was a ready writer, and on many occasions contributed to some of the leading magazines, including

Punch. Along with his brother William, who died as a student, he was a member of that clique of students which included Thomas Davidson, "the Scottish Probationer," who were giants in their time in Edinburgh University. In the *Life of a Scottish Probationer* there is a letter from Dr Cowan to Davidson, which is full of strong, manly virtue and courage, and couched in those poetic words which were his wont when writing to a friend. His imagination was of a very high order, and his taste was for everything in nature and in art that was true and beautiful and good. He was a most affectionate husband, an attached friend, a warm-hearted brother, and a forgiving enemy. As a professional brother he was always noted for his unflinching straightforwardness and high sense of honourable conduct. His personal physique was of the finest, and it brings the tear to many an eye to think that they will never again see that noble manly form on the streets of Dunbar. His religious convictions were of the strongest—in fact, few men had such a strong love to God and love to man burning in their hearts. He had that charity which never faileth. He leaves a widow who has the double burden of bad health and the shock of the sudden death. May the Almighty strengthen her!

On Friday, August 27, his remains were laid in Dunbar Cemetery, and were followed to the grave by a large concourse of people. The Free Foresters, to whom he was medical officer, carried his coffin shoulder-high to the cemetery. And the work-a-day world goes on as before, and we are left with our indifferent talents, while the clever, the bright, and the noble Cowan is taken away to a grander sphere, and this world has lost an enthusiastic student, an impulsive genius, and a noble, tender-hearted man.

PUBLICATIONS RECEIVED.

- Annual Reports of the Medical Officer of Health and the Sanitary Inspector of the Borough of Huddersfield for the Year 1879.
- W. B. DALBY, F.R.C.S.,—Lectures on Diseases and Injuries of the Ear. J. & A. Churchill, Lond., 1880.
- LOUIS A. DUHRING, M.D.,—Atlas of Skin Diseases. Part vii. J. B. Lippincott & Co., Philad., 1880.
- Dr C. A. EWALD,—Lectures on Digestion. Williams & Norgate, Lond. and Edin., 1880.
- SAMUEL FENWICK, M.D.,—On Atrophy of the Stomach, and on the Nervous Affections of the Digestive Organs. J. & A. Churchill, Lond., 1880.
- First Annual Report of the State Board of Health, Lunacy, and Charity, of Massachusetts, 1879. Boston, 1880.
- Dr ROMOLO GRIFFINI,—Aspizio Provinciale degli Espositi e delle Partoriente in Milano. Relazione Generale per gli Anni 1878 e 1879. Giuseppe Civelli, Milan, 1880.
- ARTHUR HENSMAN,—Anatomical Outlines. Parts iii., iv. Longmans, Green, & Co., Lond., 1880.
- ROBERT LIVEING, A.M. and M.D. Cantab, F.R.C.P. Lond.,—A Handbook of Diseases of the Skin, with Especial Reference to Diagnosis and Treatment. London, Longmans, Green, & Co., 1880.
- WILLIAM MACEWEN, M.D.,—Osteotomy; with an Inquiry into the Ætiology and Pathology of Knock-knee, Bow-leg, and other Deformities of the Lower Limbs. London, J. & A. Churchill, 1880.
- J. J. REYNOLDS, M.R.C.S.,—Notes on Diseases of Women. J. & A. Churchill, Lond., 1880.
- L. E. SAYRE, Ph.G.,—Conspectus of Organic Materia Medica and Pharmacal Botany. Geo. S. Davis, Detroit, 1880.
- W. P. WAINWRIGHT,—Radical Mechanics of Animal Locomotion. D. Van Nostrand, New York, 1880.
- WM. S. WILSON, L.R.C.P.,—The Ocean as a Health Resort. J. & A. Churchill, Lond., 1880.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Dystocia from Coccygeal Ankylosis.* By ALEXANDER RUSSELL SIMPSON, M.D., F.R.S.E., Professor of Medicine and Midwifery and the Diseases of Women and Children in the University of Edinburgh.

(Communicated to the Obstetrical Society of Edinburgh, 9th June 1880.)

CASE.

MRS L., born in November 1835, married April 1879, menstruated for the last time from the 23d to the 26th of July of the same year. She was under treatment for colpitis about the 2d of August, when she was separated from her husband. About the 11th of December she felt the stirrings of the fetus, and expected her confinement about the 26th of April, at latest the 2d of May. She was not taken in labour till 14th May at 1 A.M.

When I saw her at 9.30 A.M. the pains were still trifling, and the external os only the size of a shilling. At 11, the os being a little more dilated, the easily accessible head was found in the left occipito-anterior position, and so much flexed that the posterior fontanelle was nearly in the axis of the pelvis. At that time I took occasion to examine the state of the coccyx, and found the several segments immovably fixed.

At 6 P.M. full dilatation of the canals had taken place, and the tough bag of membranes began to descend towards the vulva. At 6.40 they were ruptured. The head, which from the first had been placed well within the pelvic cavity, became arrested on the pelvic floor. By this time some softening of the textures had occurred, so as to give a slight degree of mobility to the third and fourth segments of the coccyx. The first and second remained united to one another and to the sacrum. The parturient powers were in good action, although the patient was anaesthetized, and at each pain the head was driven powerfully against the resistant floor. During the pain the head felt as if it were going to be driven through; but as the wave of contraction subsided it was found to have made no advance. Rotation had occurred so that the sagittal suture cut the conjugate diameter of the outlet at

an acute angle, and the projecting tip of the coccyx made a distinct depression each time on the upper margin of the left parietal bone. The relations of the coccyx were most easily ascertained on examination per rectum; through which also it was easier to observe the impression it made on the head, since the exploring finger could be passed further up in front of the ligaments at either side of the coccyx, even before the complete relaxation of the pain. The sacrosciatic ligaments on both sides were unusually tense and firm. That on the left side, at least on its lower border, remained firmer and sharper throughout.

At 8.50, with Dr Hart's assistance, I applied the axis-traction forceps,¹ and carried the head past the point of obstruction until the occiput protruded through the vulva. Seeing that there was likely to be some laceration of the perineum, the forceps were removed; but as the natural efforts did not give promise of expelling it rapidly, and as the friends were anxious that the life of the child should not be compromised by further delay, they were reapplied, and the delivery completed at 9.15. The child was a female, living and strong, and weighing ten pounds. The perineal laceration ran to the right side of the middle line, without involving the sphincter ani. The mobility between the coccygeal segments was now felt to have extended to the joint between the first and second segments; but the first still remained adherent to the sacrum.

The patient has been able to nurse the child, and has made an uninterruptedly good recovery. The mobility restored to the coccyx at labour is still retained.

COMMENTARY.

There are one or two points in connexion with this case that have seemed to me to make it worthy of record. It is, for example, one of the clearest instances I have met with of

PROTRACTION OF GESTATION.—The protraction is certainly not very excessive; but there can be no reason to doubt that in this instance the child was carried in utero upwards of 292 days. I have no theory to offer as to the probable cause of the protraction in this instance. But it is perhaps worthy of note that the membranes were markedly adherent to the interior of the uterus; and I have noted the same condition in other patients who went beyond the expected date of their confinement.

LACERATION OF THE PERINEUM.—The tear in the perineum ran to the right of the raphe. The record might have noted further that there was a laceration in the left nymphæ towards its upper or anterior extremity. The obliquity of the tears is probably connected with the unusual degree of obliquity of the head as it escaped from the canal, the ordinary degree of rotation of the large

¹ Cf. *Edinburgh Monthly Medical Journal*, vol. xxvi. pp. 289-300.

head having been hindered by the projecting coccyx. But the point of chief interest in the case is the

COCCYGEAL ANKYLOSIS.

Varieties.—This may occur in different varieties. It may be *partial*, affecting only one joint. In this case ankylosis first takes place in the sacro-coccygeal articulation, or the terminal segments become ankylosed together. If one of the joints remain movable, it is usually that between the first and second segments. Or the ankylosis may be *universal*. The coccyx is ankylosed to the sacrum, and all its segments are united among themselves.

Again, the ankylosis may be *complete*. The union of the bones one with the other is so intimate that not the slightest mobility remains. Or it may be *incomplete*, when the ossification is such as still to allow of a limited degree of mobility.

Further, the bones of the ankylosed coccyx may retain their usual direction, or the point of it may be misdirected. I have seen it turned backwards. Trefurt¹ gives examples of lateral deviation. But the most frequent and most important distortion is found in cases where the tip of the coccyx is turned forward so as to diminish the conjugate diameter of the pelvic outlet.

Causes.—Various conditions have been adduced as likely to produce ankylosis,—such as a sedentary occupation, riding, etc.,—but without very distinct grounds of proof. Even the influence of age, which is the only factor I can trace in our patient, has not been very clearly made out; and it would form a fair subject of investigation to determine at what age the mobility of the coccyx in the female becomes impaired, or whether it is delayed through repeated parturition. Levret² remarks that “one sometimes finds, in women who have passed the age of forty without having had children, that the first of the coccygeal vertebrae is united with the last piece of the sacrum.” Smellie³ says:—“I have of late in a particular manner examined the os coccygis, especially in laborious cases and in women who were turned of thirty before the birth of the first child, and have found it actually ossified in two patients—the first turned of forty and the other about the age of thirty-three.”

But other causes have sometimes been in operation, such as blows or falls; even injuries in previous labours, followed by inflammatory action. And some constitutional conditions seem to favour it, such as the ricketty diathesis; some of the most pronounced cases of coccygeal ankylosis having been found in the ricketty pelvis.

Influence on Labour.—In the paragraph already referred to, Smellie remarks:—“In neither of these cases could I perceive that the rigidity retarded the labour; for in both, when the head of the

¹ *Ueber die Anchylose des Steissbeins.* Göttingen, 1836.

² *L'art des accouchemens.* Paris, 1761, p. 4.

³ *Smellie's Midwifery.* Sydenham Society, vol. ii. p. 8.

child came down to the os externum, it passed along, and the women were as easily delivered as those in whom the coccyx is movable, though both children were of an ordinary size."

Trefurt, in his exhaustive monograph (p. 83), shrewdly suggests that in many of the cases of difficult labour in elderly primiparae the difficulty does not lie so much in any rigidity of the canals as in want of power from imperfect development of the uterine walls. He goes on, however, to show that coccygeal ankylosis may be a very real cause of delayed labour. Even when the bone is in its normal position the ankylosis of its joints prevents the straightening of it in a backward direction, which produces in normal cases an elongation of nearly half an inch in the antero-posterior diameter. The obstruction it causes is all the more pronounced when the ankylosed bones are turned acutely forwards, and it is in cases of this kind that fractures of the parietal bones of the fetus are probably brought about.¹

Diagnosis.—That the delay of the labour in such cases is due to the condition of the coccyx, is determined by direct examination. As was noted in the report of Mrs L.'s case, the most satisfactory examination is made per rectum. When the exploration is made only per vaginam, the close adaptation of the walls of this canal around the head prevents the finger from ascertaining so precisely the condition of the coccyx during the pressure of the pains, and even in the interval the greater thickness of tissue between the finger and the anterior surface of the bone makes it more difficult clearly to determine the degree and seat of the ankylosis. Through the rectum, on the other hand, the finger is able to pass up further on the surface of the fetal head even during the progress of the pain. Moreover, when the wave of contraction is beginning to subside, the finger can very definitely pass on to either side of the coccyx and recognise the degree of indentation its rigid extremity is making on the cranial bones. And then, when the segments are grasped between the finger and thumb, so as to determine their degree of mobility, it is clear that the finger in recto has a better opportunity of exact sensation than if the additional thickness of the recto-vaginal septum were between it and the coccygeal surface.

Treatment.—The management of such a case is usually simple enough. The natural efforts may succeed in overcoming the difficulty. In the only other case I have met with, many years ago, I fractured the bones, probably at the joint between the first and second segments, and the head was then expelled naturally. Sometimes, however, forceps must be employed, and under their traction the adhesions give way, or the head becomes moulded and passes the obstruction. In a case where there was difficulty with the after-coming head, Trefurt found it necessary to deliver with forceps.

¹ Cf. article "Pelvis," *Encyclopædia of Anatomy and Physiology*, v. 83.

ARTICLE II.—*Case of Spontaneous Umbilical Hæmorrhage.* By ALEXANDER KELLER, M.D., F.R.C.P.E., Senior Acting Physician, Royal Maternity Hospital. Reported by THOMAS S. CAVERHILL, M.B., C.M., House Physician.

(Read before the Obstetrical Society of Edinburgh, 26th May 1880.)

THOUGH a goodly number of cases are on record, and numerous instances have doubtless occurred in practice which have not been published, this accident or condition may be considered of rare occurrence, most practitioners even in extensive practice never having met with a case of the kind, and authors of note (such as Dr West) freely admit not having witnessed a single case. I therefore consider the subject interesting enough to be brought before the Society, where the morbid conditions of children are, I think, too seldom discussed. An interesting case having just occurred in the Maternity affords the opportunity of reporting it, in the hope that those whose attention has been directed to the subject will tell us what they know, and especially if they have any views calculated to throw more light on the matter in regard to its true pathology and more successful management.

I have more than once before introduced the subject to this Society, and cited cases. (See published *Transactions*.) I shall now report the present case, and read remarks on the subject from notes which I have induced Dr Caverhill to compile.

Mary G. was admitted to the Royal Maternity Hospital on the 6th of May 1880, and was delivered of a seven months' male child alive after a natural labour. On the fourth day the umbilical cord was red and inflamed, with a disagreeable smell. On the tenth day, owing to the increase of bad odour, a charcoal poultice was applied, and afterwards moist boracic lint. On the following morning at 1 A.M. a bleb filled with blood was noticed on the child's forehead, and at 6 A.M. the cloths covering the umbilicus were stained with blood. At the visit at 9.30 the cloths were saturated with blood, the child struggled and cried vigorously, while in addition to the bleb on the forehead there were small ecchymoses on the knees and elbows, and petechia were also noticed on the roof of the mouth. Later on these ecchymoses increased in size, while larger patches were developed over the prominent parts of the body, or wherever pressure had been exerted by bandages or the nurse's fingers.

The bleeding was of the nature of an oozing from the whole surface of the stump, though at one point it welled up. In addition, it was also well marked at the circumference of the ring. The blood was of a mixed character, slightly red, like capillary blood, showed no tendency to coagulate in the folds of the groin, and left yellow stains on the linen resembling those of bile. Cold, and afterwards nitrate of silver, was applied, and though the latter prevented any further flow from the part touched for a few

minutes, it had no permanent effect. Lint dipped in perchloride of iron was firmly pressed into the navel ring, and collodion painted over cotton wool outside. At the end of two hours, however, blood oozed freely from the edge. Again fresh cotton wool was painted with collodion, only to be followed in an hour's time by renewed bleeding. The actual cautery was next tried, but each succeeding touch drew away the previously formed eschar. As the mother declined to allow any further treatment whatever, the bleeding continued unchecked till the child's death, nearly twenty-four hours after the first appearance of the bleeding, and fourteen days after its birth.

Post-mortem Appearance.—The body was badly nourished, and the whole skin faintly yellow. The umbilical vein and the left hypogastric artery were empty and firmly contracted. They were examined microscopically by Dr Hamilton, and were apparently healthy. The right hypogastric artery was open, and contained a trace of blood.

On referring to similar cases which have been previously examined, though in the majority the umbilical vessels have been pervious, yet in a few they have been found quite impervious. The walls of the vessels have frequently, also, been found to be thick, hard, and their adventitia reddened. In this case, the ductus arteriosus, the ductus venosus, and foramen ovale were all open, though the latter was nearly two-thirds closed. In previous cases which have been examined, these have been open or closed in an equal proportion. The liver was found to be deeply jaundiced, and its tissue friable. It had been examined in twenty-nine cases. In four it was hyperæmic, in two bloodless, in ten darker than normal, and deeply jaundiced. In ten cases the circumference was increased and its margin rounded. While the tissue, as a rule, was friable, once or twice it is described as normal. The gall-bladder was moderately distended with an amber-coloured fluid; no bile present. Whether the ducts were pervious could not be made out, but the fecal matter in the rectum was found quite pale. It had been found normal in two cases, five times empty, and once with clear, brownish-red bile. Sometimes, and especially if the ducts are impervious, it contained a clear serous or mucous amber-coloured fluid. The spleen was usually found enlarged, as in this case. Microscopically, in the present instance, it was healthy. The lungs, heart, and thymus gland are usually empty. In this case not the trace of a coagulum could be found in them. The kidneys were apparently normal, though Hening says in every case a uric acid infarctus is found in them. Microscopically the blood was normal. In a large proportion of fatal cases the children reported were to all appearance perfectly well at birth. Many are described as being stout and healthy. A small percentage were feeble at birth.

The hæmorrhage occurs most frequently about the seventh day, but it may take place at any time from a few hours after birth till from ten to fifteen days.¹ Hening states that in 160 cases the bleeding

¹ Gerhardt's *Kinderkrankheiten die Nabelblutung des Neugeborenen*, Bd., ii. s. 101.

came on before the separation of the cord, in 47 at the separation, in 25 while it occurred, in 48 cases after the stump had fallen off. If the hæmorrhage be controlled by ligature, and in other cases where no ligature has been applied, extravasations of blood appear under the skin and submucous tissue in various parts of the body. These precede or follow on the first appearance of the bleeding in about an equal number of times. The colour of the blood varies, and in many cases it is not possible to say whether it is arterial or venous. In the majority of cases, however, it is said to be like capillary blood. In many it is darker than normal, and has been seen almost black, bilious, or like cranberry juice. Accompanying these symptoms, occasionally preceding them, is jaundice, which is not only the most frequent but the most dangerous complication. Of 230 cases quoted by Hening, jaundice appeared in 89—in 46 cases before the first bleeding, in 37 accompanying it, and always with ecchymosis.

Jenkins¹ states that of 178 cases 77 had decided icteric symptoms. This complication he found had a mortality of 93½ per cent., which sufficiently shows its serious nature. Half the cases of jaundice recorded were accompanied by extravasations.

From the appearance of the first bleeding till death, Hening states half of them die on the fourth day; 83 per cent. do not live over the second week.

Though umbilical hæmorrhage must be regarded as a circumscribed form of the hæmorrhagic diathesis or hæmophilia, yet the cases recorded present as a whole peculiarities which are not common to the latter class. Grandidier² states that out of 576 bleeders (hæmophilia) spontaneous hæmorrhage from the cord only occurred in 12. As the great majority die of umbilical bleeding, there are no means of knowing whether in after life they are usually subject to hæmorrhage. In those who have survived, however, no tendency to hæmorrhage has been remarked. It is interesting in this connection (mentioned by Grandidier) that 7 cases of Jewish children having no trouble with the separation of the cord all succumbed to præputial hæmorrhage at circumcision.

Regarding the incapability of the blood to coagulate, as seen in nearly all these cases, the explanation would seem to be principally due to the influence of bile or its elements in the blood. Such changes have been so frequently found in the liver as to justify the adoption of this view. That an admixture of bile or its elements took place was first suggested by Dr Cheyne, who described a case illustrated with P.-M. appearances in his *Diseases of Children*, published here in 1807. This idea has been adopted by many observers, who saw in these jaundiced persons a remarkable tendency to obstinate and even fatal bleeding from leech-bites or whenever they received slight injuries.

¹ Jenkins, *Transactions Amer. Med. Assoc.*, vol. xi. p. 317; 1858.

² *Die Hämophilie*, 1855. Schmidt's *Jahrbucher*, 1863, Bd. cxvii. p. 335.

The blood in this case was examined twelve hours after the first attack of bleeding. The corpuscles were fairly well formed. The amount of hæmoglobin was measured, and amounted to 62 per cent. of the normal. An enumeration of the red corpuscles frequently repeated gave an average of 2,446,000 to the cubic millimetre. (The normal is over 5,000,000.) These results would show that at the commencement of the hæmorrhage there could have been no marked diminution of the hæmoglobin or red blood-corpuscles, which has been stated by many as the cause of the bleeding. That the hæmorrhage is not due to the watery condition of the blood is shown by the fact that, notwithstanding the capillary nature of the oozing, the blood is poured out under a comparatively strong pressure. This is shown not only by the rapidity with which a large quantity is lost from even a small surface, but also by the great difficulty of checking the bleeding by external compression as it wells up at the side, while at the same time, or even before this result is noticed, extensive ecchymoses take place in the surrounding part. This state of things corresponds to the true hæmorrhagic diathesis, where the bleedings are said to be due to plethora. Many observers regard a deficiency of fibrine as the cause of the non-coagulability and extravasations, but this is not applicable to a blood with such a quantity of hæmoglobin or red corpuscles. Besides, in the closely allied disease, hæmorrhagic diathesis, it has been repeatedly observed that not only is the fibrin not diminished, but is in many cases increased.

The vessels seem to have little share in the production of hæmorrhage, as they have been found quite impervious, and yet bleeding occurred. Besides, ligature of the vessels or the whole mass does not in many cases prevent its recurrence. That the tissues in the neighbourhood may assist the bleeding in some degree is probable from the fact that in those cases which recover the granulations are weak and flabby, and the surface is long in being skinned over.

This affection may be confounded with the true hæmorrhagic diathesis (hæmophilia), but the former occurs in children of both sexes, the latter having a most marked preference for the male sex. Hereditary disposition is always present in hæmophilia, rarely so in umbilical hæmorrhage. In addition, hæmophilia rarely causes death before the end of the first or second year; the blood is decidedly coagulable, and the tendency to hæmorrhage exists the whole life long. The prognosis is grave. Of 336 recorded cases, 32 per cent. recovered. The mortality when combined with jaundice has been already referred to.

In 3 cases only has spontaneous stoppage of the bleeding been followed by recovery, while 37 recovered under proper treatment, which consists of various astringent, styptic, and caustic applications, continued with compression to the navel, besides the use of internal remedies; in the former case, to arrest the bleeding tempor-

arily till the blood is improved by the administration of internal remedies, such as taraxacum and mercurials, which are indicated by the state of the liver. In all cases small doses of belladonna or laudanum should be given to prevent crying and coughing. Ergotin is also to be given frequently. Of external remedies, those which have been found most useful are tannin, alum, and perchloride of iron, used with a graduated compress, and strips of sticking-plaster over all. Simple pressure has succeeded in many cases. The plan recommended by Barnes and Ray should always be tried first. The navel is taken between the finger and thumb, and this procedure kept up by several persons. Should it succeed, a tampon of sponge, charpie, cork, or wad is to be put over the ring. Churchill recommends filling the ring with plaster of Paris, and changing it every third day; while Paul Dubois recommends ligaturing the whole mass by passing needles through the skin at right angles and making a figure of eight with a woollen thread, the whole to be allowed to drop off. The actual cautery is injurious, as seen in this and many other cases.

ARTICLE III.—*On Diseases of the Andaman Islands.* By E. S. BRANDER, M.B.

(Read before the Medico-Chirurgical Society of Edinburgh, 5th May 1880.)

WHEN I took over charge of the Andamanese Hospital in November 1877 it was very full, containing upwards of fifty to sixty inmates. A few months before my arrival here there had been a severe epidemic of measles there, which had carried off a large number and left many in a debilitated state in the Convalescent House. The mortality from this epidemic seems to have been very high, the adults dying equally with the children in a proportion quite unknown to result from that disease in our country.

Owing to the unfortunate decease of my predecessor before my arrival, I was unable to gather the details I could have wished concerning this epidemic, which, while decimating even those under treatment, seems nearly to have exterminated the inhabitants of some of the jungle encampments. From such particulars as I was able to gain, it would seem that they died rather from the fever itself, or from exhaustion, than as a result of any of the sequelæ peculiar to that disease. I could not help thinking at first that probably the ophthalmic derangements so liable to occur after measles, especially where cleanliness is not observed, might partially account for the large number of patients suffering from various affections of the eye, to which I shall again refer. I very soon found, however, that the inmates of the Andamanese Hospital were divisible into two great classes, without paying any regard to the above-mentioned cause, viz., those whose ailment was due to

syphilis, direct or indirect, and those whose disease had *no relation* to this cause. This is a somewhat novel classification, but I found it a convenient one, both for the direction of treatment and the institution of sanitary measures. Before proceeding further I will briefly state the origin of syphilis among the Andamanese. It would appear that some few years ago a certain convict petty officer was attached for duty to their "home" on Viper Island. This man had syphilis, and communicated it to one or more of the women then in that barrack. It seems to have spread with remarkable rapidity amongst the jungle tribe, and in a comparatively short time all those in the vicinity of this settlement had a large proportion of their numbers affected. Unfortunately the aborigines at that time did not know the existence or understand the meaning of an hospital for treatment. They remained out in their encampments, spreading and perpetuating the disease. I should say, from what I subsequently saw, that a considerable number must have died under these circumstances. They have no conception of medical treatment, and none of those primitive practitioners, or "medicine men," found among so many savage tribes. I am not aware when they first began coming into hospital for treatment. When I took over charge I found them coming in regularly; but those that came told of numbers who were in the remoter encampments, and who were severely suffering without knowing of the possibility of treatment. After the hospital had been under my direction a few weeks, I was happy in being able to discharge large numbers to the Convalescent House, and eventually to the jungle. The latter told the results of their experiences in treatment to their friends in the jungle, and in a short time I was glad to find that a thorough confidence in the hospital had been established, and that members of distant tribes, ten days' or a fortnight's journey away, came in for treatment and remained until I discharged them.

Syphilis, then, in its various forms, was the principal cause of disease among the inmates of the Andamanese Hospital, both numerically and in the gravity of its symptoms.

The study of syphilis among these people was exceptionally interesting, as they may be supposed, prior to its quite recent introduction among them, to have been free from it entirely; and in their case, therefore, it presented the appearance of the effect of the venereal poison acting on a "virgin soil." The conditions met with differed from what I had formerly seen in European hospitals, and also from what is given in the books as the typical appearances.

Such cases as I saw early commenced, among the men, from an ulcerating sore at the edge of the prepuce and extending *outwards*. In those cases more advanced the whole *outer* surface of the penis was a succession of chaneroid ulcers of various sizes, with some running into each other. In many cases I saw what to me was a new feature, viz., the scrotum and perineum covered with sores of this nature. In one case, I remember that the whole scrotum, most

of perineum, and nearly all the penis, was one continuous mass of ulcerated surface. In the women, the sores on the labia were also of a rapidly spreading kind. As a rule they did not suffer so much from rapid and consecutive ulceration as the men; still there were several cases where nearly the whole extent of the labia on both sides was one continuous ulcerated surface. In addition, there were occasionally sores on the mons veneris and down the thighs. Although these large local sores were clearly due in great measure to want of cleanliness, yet the condylomatous growths so commonly found to result from want of that precaution were comparatively rare. I only remember two cases of the latter, both in men, though it was more frequent among the children congenitally affected. After a varying period from commencement of original sore, the inguinal glands became inflamed, with but little antecedent induration. They rapidly suppurated, and formed large confluent sores. In those cases where the latter were met by treatment they went no further, but in those who had come from a distance, and the sores had advanced, they presented a most extensive appearance, forming great gaping apertures of considerable depth, and involving great loss of tissue. The glands on both sides were nearly always affected, and both men and women seemed to suffer equally in this respect. These were the principal lesions, but were almost always accompanied by one or more of the following:—In some there were sores about the nose and mouth, in the latter case commencing as cracks. There were two cases of ulceration of tonsil. I observed, moreover, a marked immunity from ulceration of palate, fauces, larynx, etc., so commonly found in this disease. There was no case of destruction of laryngeal cartilages, etc., or aphonia. In one case commencing ulceration across the bridge of the nose was effectually checked by treatment. In a few cases of mothers suckling children there was ulceration of nipple. The most remarkable feature, however, was a peculiar shallow and spreading ulceration of the skin. I never happened to have a case in hospital when this condition began, but I saw several shortly after, and the appearance then was that of a shallow spreading ulcer—without raised or punched-out-looking edges—and apparently only involving skin tissues, with a tendency to spread indefinitely. The loss of hair was difficult to observe, as they always shave the head. In many cases I found the surface of scalp covered with an eruption like syphilitic impetigo, going on to *S. lepra*, but I do not remember any case where the characteristic appearance of *S. rupia* was seen. There were two cases of *S. varioloid*, where the eruption was well marked on the face. The spots went through regular stages to maturation, but never burst externally, the contents being absorbed under treatment, and only a slight desquamation resulting. The syphilitic affections of bones and joints were only found in two cases, and I did not discover any *S. nodes* on subcutaneous surfaces.

The number and variety of diseases of the eye seen amongst

these patients was remarkable. I cannot but attribute a large proportion of these to the effect of the syphilitic poison, and also in a measure to the sequelæ resulting from the epidemic of measles before alluded to. There were many cases of *S. conjunctivitis*. In those cases not treated early, granular lids and opacity nearly always resulted. Keratitis was also a frequent condition. The various opacities resulting from inflammation, abscess, and ulcer of cornea were well illustrated. Onyx was well seen in two cases, with partial absorption under treatment. Partial or complete obscuration of the cornea by leucoma, often amounting to albugo, was very frequent, especially in those cases in which corneal ulcers had run through their course without any treatment, and the opacity had become permanent. There was one case of pterygium, none of hypopion.

In many cases where I was able to establish an early treatment of the corneal ulcers a trifling amount of nebula only remained. There were some instances of dubious syphilitic iritis, but the great prevalence of opacity of the anterior structures of the eye rendered ophthalmic examination in this and other cases impracticable. Cataract was found as often in non-syphilitic as in syphilitic patients. The constitutional condition induced by these symptoms detailed was one of complete debility. The body in all cases became much attenuated, and the women, who are stouter than the men, became rapidly reduced to mere skeletons. Congenital syphilis was well illustrated in several infants who were born while their parents were in hospital. The children so affected were much attenuated, and the "snuffles" well marked. In more than one case the child had such a severe touch of *S. ophthalmia* from its birth that it never opened its eyes through photophobia for weeks, and in the absence of treatment would probably have lost the contents of the eyeball. The children presented more of the condylomatous growths than the adults. Some had a modified form of the impetigenous skin affection which was very tedious. The syphilitic poison in its effects upon them was entirely disassociated with any gonorrhœal taint. I do not remember any case where there was any purulent urethral discharge, or where there was any history of chordee or spasmodic stricture of the urethra. The poison as found among them is evidently the pure syphilitic virus. The study of its effects manifested on their persons induces me to accept the "unistic" theory of syphilitic poisoning, as contradistinguished from the "dualistic." It seems to me that here we find instances where the constitutional symptoms are formidably and rapidly developed from the disease, commencing as a "soft chancre." It is true that the spreading nature of the ulcers may be partly fictitious and due to want of cleanliness. After inquiring, however, as well as the circumstances permit, I cannot find any evidence to show that the disease commences with the true "hard chancre." The amount of induration has varied, I believed, but the true soft

chancre has always and early supervened. As this disease was the most important one I had to combat during my medical charge of these people, I will at once finish my remarks on treatment, etc., before going on to the discussion of their other complaints.

I had only a staff of one petty officer and two "ward coolies"—all more or less illiterate men—to carry out my instructions during my absence. I had therefore to formulate the rules to be observed in as simple and easily remembered a form as possible. I accordingly directed—(1.) That all newly arrived patients, on admission into hospital, should at once discontinue the habit of painting their bodies and wearing the various customary bands round the waist. Both these causes kept up a decided irritation of ulcerated surfaces, and doubtless tended to increase them. (2.) That they were to bathe twice daily in the sea, and otherwise keep their bodies in a cleanly state. (3.) Those with superficial sores to be isolated as much as possible, and supervision be exercised that they do not lie down or sleep all huddled together (a state of things which is generally practised by them when outside). (4.) That the children in arms be properly washed, and that mothers with milk be not allowed to practise their barber's function before alluded to.

Remedial treatment was very simple and efficacious. Even as the syphilitic poison seemed to have found a favourable nidus for its development, so also was the action of drugs, locally and internally, most effectual. We were necessarily rather curtailed in our medicinal resources, only giving them such cheaper and more abundant drugs as could be spared from the large convict hospital on Viper Island. It was thus doubly fortunate that they were amenable to simple and inexpensive treatment.

The latter was as follows:—Any new arrival, after his initiatory bathing and cleaning, had his ulcers freely cauterized with solid sulphate of copper, and then painted over with carbolic oil (we could not afford *lotio nigra* or lint dressings for so many cases). An eschar was formed over the surface of the ulcer, and the latter at once began to take on reparative action. This treatment was applied to all sores, whether about the generative organs or elsewhere. The patients received internally a mixture containing the *Liq. hydrarg. perchlor.* and *Pot. iodid.* The average dose was 20 minims of the former to 5 grains of the latter in solution. The children received gray powder in proportional doses, with occasional calomel dusting over condylomatous surfaces. This acted like a charm, the child's smuffles rapidly subsiding, while the gain in flesh was surprising. In all cases where the ulcerated surface had healed and no actual sore remained, the site of the latter was rubbed with blue ointment. This had the effect of discussing any remaining inflammatory products, and soon only a firm cicatrix was left. In many cases the latter gradually faded, until merely a paleness of the skin indicated the place of what a few weeks before had been a large and gaping ulcer. With the adults, in cases where there was

obstinate skin affection, I alternated the Liq. hyd. per. with calomel or gray powder internally, but, as a rule, got the best results from the first preparation.

I always looked out for salivation, and when I found it coming on discontinued the mercury internally, giving the Pot. iodid. only for a time, but never remember any relapse on the part of the sores as a result of this. When once their surface had been well destroyed, and the patient received a little mercurial treatment, the progress was always to recovery. The way these people regained their flesh, and, indeed, their usual good spirits, under treatment was very gratifying, especially when, as I mentioned, it resulted in bringing in those outside more early for treatment, with a greater chance of successfully combating the disease.

During the ten months the Andamanese Hospital was under my direction, I should think there were from 150 to 200 syphilitic patients passed through it. Of these, when I left, the majority had returned to the jungle cured, 20 or 30 were in the Convalescent House, and only 9 patients remained actually in hospital, all of whom were in a convalescent state. We may thus hope in future, if not to exterminate the disease, at any rate to sufficiently reduce the severity with which it at present exists among these people.

As I before stated, the other diseases I found amongst the Andamanese were of far less importance, both in the number of cases involved and in the gravity of their symptoms.

To begin with medical diseases. There were no instances of fever proper, either of the periodical or continued variety, while the hospital was under my direction, though, as mentioned, a severe and fatal epidemic of measles had raged among them some time before my arrival. The only fever I saw was of the symptomatic kind, and associated with synovitis and traumatic injury, to be afterwards mentioned.

These people clearly illustrate the signal exemption from certain diseases through prolonged habit and heredity combined. Thus, though they breathe the same air and are more in the malarious jungle than the same number of convicts, they never suffer from any of the malarial fevers. The latter, though natives of a tropical clime and from all the various districts of India, suffer severely from fever. I should think that in the various convict hospitals there is a mean daily total of 500 admissions from fever alone, *i.e.*, remittent and intermittent. Their disregard of solar heat is also very remarkable. The convicts from India generally retain more or less of their hair, wear puggerees, etc., and prefer resting or working in the shade during midday hours. Yet here are these people, with their black heads generally clean shaved, and no cloth on the head—with the whole cranial surface presented in the most suitable manner for absorbing all the heat that falls on it—remain under a noonday sun within 12° N. lat. of the equator, and never notice the heat!

I have not met with any case of dysentery proper among them—only one instance of melena from mechanical irritation.

They are not prone to diarrhoea or dyspepsia. It needs some unusual or extra large combination of turtle flesh, sugar-cane, uncooked crabs, jack-fruit, unripe roots, and oysters out of season to upset their adamantine digestions; and when this happens, a dose of opening medicine followed by a carminative astringent soon puts them right again.

I saw no true cases of disease of the nervous or vascular systems. Their respiratory system is more prone to be affected.

I saw cases of pulmonary catarrh, bronchitis, and even phthisis, but the instances of the latter were generally connected with a history of syphilis. In these cases I fancy that if an accurate history of the case could have been obtained it would have been found that the supervention of the phthisis was subsequent to the establishment of the syphilitic dyscrasia.

In catarrhal affections of children the inflammation affected more the Schneiderian and conjunctival membranes than it concerned the structures of throat or lungs.

Of diseases of the lymphatic system—with the exception of the involvement mentioned under syphilis—I only met with mumps in two or three children. In the case of one patient I had to incise the parotid gland, and there was a considerable discharge of pus, with a rather tedious but complete recovery under Pot. iod. and cod-liver oil with local deobstruents.

I saw no case of independent congestion, inflammation, or abscess of the liver. There were some instances in which pain was referred to it. These recovered under treatment, and were probably due to some commencing gummatous growth of a syphilitic nature.

I never found any of their spleens enlarged, always normal size. None of that immense increase of volume, such as I have dozens of cases of in my convict hospitals. This is doubtless due to their exemption from fever.

Regarded from a surgical point of view, their tissues indicate good reparative power after injury. As mentioned, even when their systems were under the influence of the syphilitic virus, they made good and rapid recoveries from sores involving large breach of surface and loss of substance. The two best cases of traumatic injury I remember were, one of shark-bite in a woman, and one caused by the thrust of a wild boar's tusk in a man. In both instances the wound was on the leg, was of a deep and lacerated nature, and involved nearly its whole extent from ankle to knee. There was naturally considerable purulent discharge and sloughing of tendons. In each case, however, a firm cicatrix finally resulted, with only partial immobility of foot in the latter case. Recovery took place in from four to six weeks.

There were a few cases of abscess, whitlow, etc., which, after opening and evacuating, went on well. In the dressing of all these cases I found the carbolic oil of great value, as in those cases where we could not supply lint, etc., it was found enough merely to paint

the part over with the oil. I never saw myself any case of tumour or leading structural deformity of the body. I fancy these abnormalities are rare amongst the tribes about here. I am informed, however, by people who have resided in the Nicobar Islands—a little south of these, and forming part of this settlement—that amongst the Nicobarese humpback, spinal curvature, deformed legs, and large pendulous tumours are by no means rare. The only surgical affection of bones and joints that I saw was synovitis of the knee and shoulder joints. Both yielded to treatment, but it was very difficult to induce the patients to keep the parts at rest, especially in the case of the knee. In the latter instance I tried several discutients, and finally got the best results from a modification of "Scott's dressing." There were many cases, both in children and adults, of purulent discharges from the ear. There was no case where extensive abscess of meatus or destruction of more internal structures by suppuration occurred. I am therefore inclined to think that this purulent otorrhœa must have been a sequela to the antecedent epidemic of measles before alluded to. Amongst structural deformities of the eye I mentioned cataract as being present in cases where no syphilitic history was traceable. The number of people suffering from this opacity was considerable. The most remarkable deformity, however, that I ever saw was presented in two cases of anterior staphyloma. In each of these the cornea and other structures protuberant anteriorly resembled a small black cherry in size and aspect. This projection was so excessive that it quite prevented the eyelid from closing over it, and thus, waking or sleeping, the unfortunate sufferers could not close these eyes. The organ so affected was quite useless for vision, but had not lost its common sensibility, as was testified by the irritation displayed when foreign particles impinged on it. With the other eye closed, this black, cherry-like protrusion starting out between the lids gave the patient a very singular aspect. The two cases had no connexion with each other, and there was no syphilitic history. I proposed the operation of "abscission," for which both these were good cases, but the men were timid about the cutting part, and preferred to remain as they were. I had no occasion, while in charge of the Andamanese Hospital, to perform any capital operation on one of their number. Up to the present they are frightened of the knife, and it would only be in a case of life and death, I imagine, when they would voluntarily submit to a leading operation being performed on their persons.

Such, then, very briefly and imperfectly, are my experiences of disease among these curious aborigines. At the time I was in charge of their hospital I had likewise the direction of three separate convict hospital establishments, with a combined total of one thousand patients and upwards, which necessarily were my principal charge. I had not, therefore, the time to take those notes and observations which I should otherwise have liked to do in treating of this subject.

As the Andaman Hospital was only opened a few years ago, and as none of my predecessors wrote on their experiences therein, I venture to claim the merit of originality for this otherwise imperfect treatise on "Disease and its Treatment as witnessed among the Andamanese."

ARTICLE IV.—*Case of Delivery through a Scoliotic Pelvis.* By FRANCIS HENRY CHAMPNEYS, M.A., M.B. Oxon., M.R.C.P., F.L.S., Medical Registrar to St Bartholomew's Hospital, Physician to the Out-Patients at Queen Charlotte's and the Samaritan Hospitals.

THE following case, which was carefully observed and measured, is thought of sufficient interest to be recorded:—

Scoliotic pelvis; induction of premature labour; result to mother and child favourable.

H. S., æt. 30, single, came to me at the Samaritan Hospital on 29th June 1880, complaining of amenorrhœa of three months' duration, an irritation of the skin, and a vaginal discharge, also enlargement of the abdomen for two months. The skin disease proved to be scabies, for which sulphur ointment was prescribed. On more exact investigation the amenorrhœa proved to be of six months' duration, which did not, however, claim any great care on the patient's part, as she had had amenorrhœa lasting three months on a previous occasion without any excess when the next period came. She had had no morning sickness. She is very short of stature. On cursory examination of the abdomen, movements were felt, and the foetal heart plainly heard.

On more precise inquiry, she did not walk till three years old; cut her teeth late; was used to carrying children when young; has had typhoid, never any abscesses; obscure history of a fall early in life. Her legs were formerly bandy, but became straight again, though she never was off her feet when once on them. She is 49 inches in height. In standing the right ilium is higher than the left; walks with feet normally turned out, no rolling in gait; right crista ilii straight, venter looking forwards and running almost directly outwards; left crista ilii more curved and perpendicular, running more antero-posteriorly; head carried rather forward, and not to either side. From this point the spinal column runs gently to the left as far as the vertebra prominens, from which point the curvature becomes much more marked, the angle of divergence from the perpendicular amounting to 45° , together with some kyphosis; this culminates at the sixth dorsal. From the sixth dorsal begins a scoliosis to the right, with lordosis as far as the fourth lumbar, where both curvatures cease. Legs parallel and straight.

Posterior perpendicular dropped from first cervical to first sacral

spine shows the following divergences:—At 3d dorsal $\frac{1}{2}$ in.; 6th dorsal, $2\frac{1}{2}$ in.; 9th dorsal, $2\frac{1}{4}$ in.; 12th dorsal, $1\frac{1}{4}$ in.; 2d lumbar, $1\frac{1}{4}$ in. The spines nowhere cross the anterior perpendicular to the right. Sixth dorsal spine to right post. sup. spine = 7 in.; sixth dorsal spine to left post. sup. spine = $5\frac{1}{2}$ in.

The right ribs run round with a very short curve, and hardly project beyond the right post. sup. spine; there is no interval between ribs and ilium. The left ribs, which are obviously much longer than the right, run backwards and then outwards and forwards with a very large curve, overhanging the most prominent part of the iliac crest, but leaving an interval of $1\frac{1}{2}$ inches. The right transverse processes can be plainly felt in the region of greatest curvature on a level with the spines.

A plummet let fall from the highest cervical spine (base of occiput) falls $\frac{1}{2}$ inch to the right of the first sacral spine, and $1\frac{3}{4}$ in. to the right of the tip of the sacrum, but falls equally between the two heels. The sacrum seems to be thus scoliotic to the left, and is sharply curved backwards, the coccyx being acutely flexed.

Per vaginam.—The promontory is felt to the left side. The linea innominata cannot be felt all round (pelvis is broad). The right tuber ischii can be felt per vaginam more plainly than the left (eversion of left tuber ischii, inversion of right). She has granular vaginitis (colpitis granulosa). We have thus dorsal scoliosis to left, lumbar to right, sacral to left, with dorsal kyphosis and lumbar lordosis, also dorsal rotation to right.

The pelvis is flattened, not narrowed transversely (no general contraction); sacrum narrows left half. The left ilium has undergone rotation round acetabular and antero-posterior axes, as shown by the greater height of the left ant. sup. spine, greater verticality of left venter illi, and eversion of left ischial tuberosity. The force acting has been the great sinistral dorsal scoliosis, which is not compensated, while the dorsal kyphosis is more than compensated by the lumbar lordosis. The left leg has borne the greater weight and is the larger.

MEASUREMENTS.

	Inches.
Height of body, - - - - -	49
Sp., - - - - -	$10\frac{3}{4}$
Cr., - - - - -	$10\frac{1}{2}$
C. ext., - - - - -	$5\frac{1}{2}$
C. diag., - - - - -	$3\frac{1}{4}$ (+)
Antero-post. diameter of outlet, - - - - -	$4\frac{1}{4}$
Trochanters, - - - - -	$11\frac{3}{4}$
Right ant. sup. spine to left troch., - - - - -	12
Left ant. sup. spine to right troch., - - - - -	$11\frac{1}{2}$
Sp. of 5th lumbar vert. to right post. sup. spine, - - - - -	$1\frac{3}{4}$
Sp. of 5th lumbar vert. to left post. sup. spine, - - - - -	$1\frac{1}{2}$
Sp. of 5th lumbar vert. to right ant. sup. spine, - - - - -	$6\frac{1}{2}$
Sp. of 5th lumbar vert. to left ant. sup. spine, - - - - -	$6\frac{3}{4}$
Symph. pubis to right ant. sup. spine, - - - - -	$6\frac{3}{4}$

	Inches.
Symph. pubis to left ant. sup. spine, - -	6 $\frac{1}{2}$
Symph. pubis to right post. sup. spine, - -	6 $\frac{1}{2}$
Symph. pubis to left post. sup. spine, - -	6 $\frac{1}{2}$
Symph. pubis to right trochanter, - -	6
Symph. pubis to left trochanter, - -	5 $\frac{3}{4}$
Right post. sup. spine to left ant. sup. spine, - -	8 $\frac{1}{4}$
Left post. sup. spine to right ant. sup. spine, - -	7 $\frac{3}{4}$
Right post. sup. spine to left trochanter, - -	8 $\frac{3}{4}$
Left post. sup. spine to right trochanter, - -	8 $\frac{3}{4}$
Right post. sup. spine to arch of pubis, - -	6 $\frac{1}{4}$
Left post. sup. spine to arch of pubis, - -	6
Right ant. sup. spine to right post. sup. spine, - -	5 $\frac{3}{4}$
Left ant. sup. spine to left post. sup. spine, - -	5 $\frac{1}{2}$
Right ant. sup. spine to ground, - - -	32 $\frac{1}{2}$
Left ant. sup. spine to ground, - - -	33
Right cr. il. to ground, - - -	35 $\frac{1}{2}$
Left cr. il. to ground, - - -	34 $\frac{1}{2}$
Right trochanter to ground, - - -	31
Left trochanter to ground, - - -	31
Circumference of right thigh, - - -	12
Circumference of left thigh, - - -	13
Circumference of right calf, - - -	10
Circumference of left calf, - - -	10 $\frac{1}{2}$
Circumference of abdomen, - - -	38

Abdomen very prominent, almost conical just below navel; uterus reaches nearly to ensiform cartilage. Ribs somewhat beaded, wrists not enlarged. Heart sounds natural, cardiac dullness reaches to within three inches of clavicle; at both bases the breathing is somewhat prolonged, almost tubular at right base, fine râles at left base.

The conjugata vera being estimated at three inches, it was decided to induce premature labour in the thirtieth week, and Dr Hope was kind enough to put one of his beds in Queen Charlotte's Hospital at my disposal for this purpose.

She was admitted July 19th.

Labour.—Kiwisch's method was first tried, douches of alternately warm and cold carbolized water every three hours, for a quarter of an hour at a time, being tried for twenty-four hours. This did the vaginitis good, but induced no pains.

July 21st.—An elastic catheter was then introduced between the uterus and membranes. This occasioned a very slight leakage of liquor amnii. As the patient lay in bed the uterus showed great sinistral obliquity. Head could be felt per hypogastrium lying on the right side of the brim of the pelvis. The fetal spine could be traced from the junction of the inner with the middle third of the right Poupart's ligament, just below the navel, to a point three inches directly to the left of the navel. Small movable parts to the left and above, shoulders apparently to the right and below. Heart sounds loudest midway between navel and pubes, and a little to the right of the middle line, vigorous. Per vaginam, os externum

passable to the finger, head felt at the brim, the greater part to the right of the promontory; no fontanelle can be reached (2d vertex presentation).

On *July 23d* some slight pains began, which increased, and the os dilated sufficiently for the sagittal suture to be felt running nearly transversely, and somewhat nearer to the pubes than the promontory. In the course of the day the sagittal suture came still nearer to the pubes (posterior parietal presentation), but the umbilical cord began to become prolapsed posteriorly. It pulsated strongly thirty-three times in a quarter of a minute. The head continued to descend slowly, but the cord became still more rapidly prolapsed; its pulsations remained strong and regular, thirty in a quarter of a minute. The sagittal suture now began to approach the sacrum, the posterior parietal bone to overlap the anterior, and the sinciput to become lower than the occiput.

July 24th.—The head descended slowly, but as it did so the cord became pressed between the head and the lower segment of the uterus, the pulsations becoming weaker and less frequent, and ceasing entirely during the pains. The vaginal portion of the cervix had become obliterated, and the os the size of a florin and easily dilatable. It was decided, in the interests of the child, to proceed to turn and extract. Chloroform was given, and turning accomplished with some difficulty, the waters having apparently nearly all escaped; the uterus tightly contracted. The cord was found to be pulseless; both arms had to be freed. During some slight delay in extracting the head, two convulsive respiratory movements were observed, and the child was born in the livid stage of asphyxia, rapidly passing into the pale (flabby) stage, but the sphincters were not yet truly relaxed. Bain's method of artificial respiration failed to inflate the lungs, apparently from obstruction to the glottis by the tongue; but Schultze's method, with mouth-to-mouth inflation, cautiously used, restored the child completely in about a quarter of an hour. No reflex movements for some time. When born the cord was pulseless, but the heart beating slowly, and the hypogastric arteries could be felt pulsating just proximally to the navel. The placenta was removed by expression, but left half the membranes behind, which were removed by the carbolized hand; the uterus contracted well. The hand introduced found the conjugata vera $3\frac{1}{4}$ inches, the promontory projecting to the left; the posterior part of each linea innominata strongly curved. Convalescence of both mother and child was uninterrupted. The bitemporal diameter of the child immediately after birth was $2\frac{1}{4}$ inches with very moderate pressure.

Remarks.—The fact that pulsation in the cord had ceased while the foetal heart was still beating fairly, makes it probable that the placenta was considerably detached by the time that the hand was introduced, and that the enfeeblement of the pulsations of the cord, which indicated extraction, was due to its pro-



gressive detachment, and consequent loss of function. This is rendered more probable by the contracted state of the uterus found by the hand when introduced. The cord was prolapsed on July 23d, 9 P.M., and delivery took place July 24th, 5 P.M., or twenty hours after its first prolapse. The conjugata vera was one-quarter inch larger than the other measurements warranted. This was due to the term in the calculation which is always unknown, viz., the angle formed by a line drawn from the promontory to the posterior surface of the pubes. Whether the descent of the head, which followed the usual course of heads in flat pelves, was really influenced by the flattening is doubtful, when we remember that the conjugata vera was $3\frac{1}{4}$, while the bitemporal was $2\frac{1}{4}$; still we must remember that the uterus was never retracted over the head, which fitted the strait the more nearly for the double thickness of uterine walls.

ARTICLE V.—*Case of Molluscum.* By Surgeon-Major K. McLEOD, A.M., M.D., Officiating Professor of Anatomy, Calcutta Medical College, and Second Surgeon, College Hospital. From Notes by Assistant-Surgeon NITRAI CHAM HALDAR.

(Read before the Medico-Chirurgical Society of Edinburgh, 5th May 1880.)

WOMMAID ALI, a Mohammedan youth, æt. 25, unmarried, of temperate habits, inhabitant of Seragunge, in the district of Pubna, Lower Bengal, jute-binder by occupation, was admitted into Dr McLeod's ward on the 10th of April 1879 with a large tuberculated patch on his back.

History.—The patient states that from his birth he had an excessively pigmented condition of the skin of the back, a small nut-like protuberance below the left shoulder-blade, and small black spots like moles scattered all over his body. About the age of four years other small tubercular prominences appeared on his back, which have since gradually increased, and have coalesced and grown to their present dimensions. Neither his father nor mother, nor any other relation, as far as he knows, has been similarly affected.

Present condition.—The body is fairly nourished, but the patient is short and boyish-looking for his age. The skin is generally of a coppery tint, except on the back, where it is deeply pigmented, and there are numerous coal-black spots scattered all over his body. The mouth, penis, and scrotum are, however, exempt from these. The skin is not hairy, except over the pigmented parts, where there is a development of strong bristly hairs, especially over the shoulders and loins.

The pigmentation of the skin of the back extends upwards to the nape of the neck, and thence to the top of the shoulders, along the anterior borders of the trapezius muscles. The margins descend

over the neck of the scapulæ and posterior folds of the axillæ, and, curving forwards, approach within 4 inches of the middle line in front of the left side, and 5 inches on the right side. They then arch below the crest of the ileum and meet at the lower part of the back, opposite the second piece of the sacrum. The area thus defined includes the whole of the back and a good part of both sides, and presents the following peculiarities:—It measures 23 inches vertically, and 21 transversely. There is an outer or circumferential zone of deeply pigmented skin. The edge of this zone is well defined, mostly straight, occasionally crenate. There is no difference in level between it and the healthy skin, into which it simply merges. The breadth of this pigmented zone is about 3 inches. The skin is black, soft, somewhat corrugated, looser and thicker than the healthy skin, and freely movable on the subjacent cellular tissue. It is more hairy than the healthy skin, and in some places very much so. There are few or no tubercular elevations on this zone. The openings of sweat-glands are apparent, and admit a bristle, which enters the duct to the extent of about a line. Sensation here is unimpaired.

Within the pigmented zone is an intermediate zone of smaller tubercles, separated by black skin. They vary in size from that of a pea to a hazel-nut, are globular in outline, and attached to the surface by a broad or pediculated base. The colour of these is lighter than of the surrounding skin. They have a brawny feel, are less sensitive than the skin, and show two or three openings of sweat-gland ducts, into which a bristle enters to the extent of half an inch. Centrally the dorsum of the body is covered with a mass of large, thick, elevated masses, some of them measuring three or four inches in diameter, separated from each other by sulci, and varying in form, but generally affecting a circular or oval outline. These are less pigmented than the smaller lumps, and much less so than the skin. In some places the pigment has disappeared, and the surface presents a mottled or patchy aspect, like tortoise-shell. The surface is smooth, drawn, and rather glazed, and the masses feel hard and tough, like masses of "elephantoid" tissue, such as is found in leucæmia of the scrotum and leg. They move freely on the subcutaneous cellular tissue, are devoid of hair, and the orifices of the sweat-ducts are very perceptible, separated more widely, and admitting a bristle to a greater depth. They are the seat of persistent itching, but common sensibility is blunted, and no expression of pain is elicited by rough handling. In some places abrasions and scabs have been formed by the patient scratching these lumps. Black spots are scattered all over the body. They occur on even the palms of the hands and soles of the feet. Some are raised, tuberculated, and devoid of hair, and others on a level with the skin, and hairy. There are a few spots neither tuberculated nor hairy, simply pigmented. The spots on the lower extremity are generally more tuberculated than those on the upper. There are three larger hairy patches on the buttocks.

The patient is in good health, has no enlargement of liver or spleen or lymphatic glands. Heart and lungs healthy. Tongue clean, appetite good, bowels regular, urine normal. His irides of the usual colour with natives—dark hazel. He has a small goitre.

He was kept under observation for a few days, until notes and sketches were taken, and then sent home, as it was not considered advisable to subject him to any surgical operation, and medical treatment did not promise to be of any avail.

ARTICLE VI.—*Notes of a Case of Physometra.* By JAMES N. M'DOUGALL, M.D., Coldingham.

(Read before the Obstetrical Society of Edinburgh, 30th June 1880.)

IN order properly to understand certain references which will be made to treatment in the sequel of this paper, I think it right to state in the outset that the following case is one of a series which I have for some years been collecting to prove the beneficial effects of chlorate of potash and tinct. ferri perchloridi on intra-uterine life. It has been my intention to lay the results of my experience on this subject before the members of the Obstetrical Society; but as new cases are every now and again cropping up, I have delayed transmitting them in the belief that the larger the number of successful cases, the stronger the evidence in support of any particular mode of treatment. During the course of next session, however, I hope to have the pleasure of submitting such a communication to the consideration of the society.

Mrs J., aged 40, married for fifteen years, has had four children, and eight or nine miscarriages. Last child born six years ago. Catamenia began when thirteen years of age; they continued regular, normal in quantity, and unattended with pain, till her marriage when 25 years of age. Previous to marriage she was a strong, robust, plethoric woman, and employed as an out-door farm-worker. During her unmarried life does not recollect of ever being even for a day laid aside by "sickness." Her father died from acute phthisis in the 35th year of his age. Her grandmother and mother died from "flooding" in connexion with childbirth. The grandmother's case appears to have been an ordinary one of post-partum hæmorrhage at the full term; the uncle being still alive. The mother, however, seems to have succumbed to hæmorrhage following abortion, as the daughter was sure "no baby came home" at the time of her mother's death. Two sisters died in childbirth; one from child-bed fever; the other died suddenly while in labour, undelivered. A brother died after a lingering illness from "consumption of the lungs;" another after three days' illness from cerebral apoplexy. One sister and two brothers still alive, and apparently in good health. No relations on the father's side in life that she is aware of.

Married to a farm-servant in the month of May 1865. Her period ceased three days before marriage; at $4\frac{1}{2}$ months "felt life," and about the same time complained of a dull, gnawing pain, increased by pressure, and confined to a space about three inches square in the left iliac region. The pain continued varying in its degree of intensity for upwards of three months. Slight constitutional symptoms accompanied the pain, but she continued to discharge her household duties, and was only confined to bed for three days during the period of gestation. On the 26th day of March 1866, or 302 days from her last catamenial period, she was delivered of a still-born female child, strong and well developed. An examination of the body revealed nothing which could account for death. The placenta was much indurated, and the membranes remarkably thickened; a few apoplectic clots were scattered over the maternal surface, and some patches of fatty degeneration observed towards its circumference. Was this a case of protracted gestation, or merely retention of a dead fœtus? Inflammation of the placenta was very evidently the cause of the death of the child, and afforded indications for treatment in future pregnancies. I attended her, after this, during three confinements; and as on each of these occasions she complained of symptoms which led me to suspect disease of the placenta, I administered chlorate of potash and tinct. ferri perchloridi with the most happy and successful results, presenting her each time with a living, healthy child. After her last confinement she removed from my district, and was not again a patient of mine for upwards of six years. During this period she had eight or nine miscarriages, but never a living child.

On the 6th day of June 1878 I was desired to visit her. She informed me that she considered herself to be between six and seven months pregnant. She had, as was usual with her, been very much annoyed with morning sickness; the breasts had become full and painful, and the abdomen had progressively enlarged. At the fifth month she distinctly "felt life." For six or seven years has been very much of an invalid, "and for the last six weeks been closely confined to bed from a slow fever."

Present Condition.—Thin, pale, and extremely anxious expression, with a slightly sallow complexion. Much emaciated and breathless. Feeling of great exhaustion, and, on raising the head, tendency to fainting. Complains very much of fulness and distention of the abdomen. Tongue dry, furred, red at tip and edges; thirst; skin moist, and bedewed with slight perspiration. Temp. $99\frac{5}{10}$; pulse small, frequent, and variable, 90 to 120 per minute; respiration hurried and somewhat laboured, 30 per minute. Much annoyed with very frequent dysenteric diarrhoea. The abdomen very prominent, the enlargement extending a little above the umbilicus, oval in form, hard and firm, and well defined. Percussion elicits a clear tympanitic sound over its entire surface. No

fluctuation at any part. No placental or foetal sounds heard through the stethoscope. A vaginal examination only reveals negative signs. The vagina was very dry, and its walls were in close apposition, the introduction of the finger, although well oiled, causing no little uneasiness. There appeared to be complete absence of all secretion. The cervix nearly effaced, the portion felt being firm and dry, and altogether without the moist, pulpy feel of pregnancy. A bi-manual examination proved the uterus to be enlarged, but light. The ovaries were also enlarged. A thorough examination having thus satisfied me that the woman was not pregnant (I may add that the os was dilated so as to admit the point of the index finger), to complete the diagnosis I tried to introduce the sound, but met with considerable difficulty in doing so. The internal os was strongly contracted. I found it impossible with what I considered a legitimate amount of force to gain an entrance for the sound. I therefore deemed it advisable, before resorting to any other measures, to try the effects of chloroform in overcoming the spasmodically contracted os. Immediately she was brought completely under its influence the sound slipped into the cavity of the uterus with the slightest effort. This was followed by the instant rush as of pent-up air from a punctured bladder, with a distinctly audible whizzing sound. In a few minutes the room, which was a small one, was so filled with a horribly foetid faecal odour as to render it impossible to remain at the bedside. The doors and window were opened, the sound was withdrawn, and I went out into the open air. In about ten minutes I returned again to my patient, and found her recovering from the effects of the chloroform, and beginning to complain of the very offensive, sickening smell. Examining the abdomen, the enlargement was discovered to be reduced to three-quarters of an inch below the umbilicus. It was still, however, very considerable, and as the escape of gas had ceased since the withdrawal of the sound, I tried to re-introduce it; but the resistance offered was this time, if possible, even greater than on the former occasion. Being now, however, fully satisfied as to the nature of the case I had to deal with, I resolved again to administer chloroform and endeavour to empty the uterus of its gaseous contents. In place of using the sound this time I introduced No. 9 gum elastic catheter, through which the air continued to escape like a jet of gas until the uterine enlargement was reduced to a level with the pubes. The catheter was then removed, a sponge-tent introduced, a firm binder applied, a soothing draught administered, with instructions to give her, at short intervals during the night, beef-tea and brandy. On visiting her next morning I was not a little disappointed to find a hard tympanitic swelling, the size of a large football, situated in the middle line, and extending about half an inch above the pubes. On removing the sponge-tent it was found to be soaked with a disagreeably foetid-smelling, bloody, and puru-

lent discharge. The removal of the sponge-tent was followed by the expulsion of a considerable quantity of gas in spasmodic, explosive manner, along with clotted blood, purulent detritus, and decomposed fleshy masses. The internal os then again contracted firmly and checked any further discharge. The uterus was still felt above the pubes, but percussion over it was dull, in place of clear and tympanitic as before. An examination of the uterus by the vagina and abdomen ascertained it to contain a movable body of some size. I now resolved to put the woman again under the influence of chloroform, dilate the os so as to admit the fingers or hand, and then thoroughly empty the uterus of whatever it might contain. Full dilatation was an extremely tedious process; it was, however, ultimately effected by the introduction of one of Barnes's dilators. The hand thereafter gained an easy entrance, and, moved about in the interior of the uterus, felt as if introduced into a pot of pea-soup in which there was intermixed pieces of beef or fat and broken bits of bone. When the fingers reached the fundus the palm of the hand was formed into a hollow and gradually brought towards the os, sweeping everything before it. The mucous lining of the uterus felt rough and granular for the most part, but some small portions were soft and pulpy. The site of the placenta was considerably raised above the rest of the uterine surface, and some difficulty experienced in peeling off attached portions, which were very closely adherent. Considerable losses of blood accompanied and followed the emptying of the uterus, and before its completion the patient was in a condition of the greatest prostration. The contents of the uterus, collected in a basin, had an offensively strong putrid smell, of the consistency of gelatine, and a dirty yellowish-brown colour; masses of clotted blood, lumps of half-macerated flesh, pieces of bone, hair, and the trunk merely of a fetus in the last stage of putrefaction. The pieces of placenta removed were at some parts about an inch and a half in thickness, and, with a little dissection, could be separated into three layers, a strong serous membrane being placed between each layer. The arrangement suggested the idea of one placenta growing over the remains of the one that preceded it.

As there was still manifested, notwithstanding all that had been done, a great tendency to contraction of the internal os, there was introduced, in lieu of a better substitute, a piece of gutta-percha tubing—previously steeped in a solution of carbolic acid—which was allowed to remain for some days, and through this there continued to flow a pretty copious sanguino-purulent discharge. On two occasions the loss of blood was so great as to necessitate the injection of a weak solution of perchloride of iron, and plugging, before the hæmorrhage was restrained. Frequently the tube was plugged with coagulated blood, and when this occurred during the night there was almost invariably a slight accumulation of gas at next visit. The further treatment of the case consisted in swab-

bing the interior of the uterus with nitric acid, two applications of which removed the granular state of the mucous membranes. Four weeks after its first application a large slough, forming almost a cast of the uterus, was discharged, after which involution proceeded rapidly. Daily tepid injections of permanganate of potash and carbolic acid, occasional subcutaneous injections of ergotine and chloral hydrate, and the internal administration of strychnia and iron, assisted in restoring the uterus to its normal dimensions. Shortly thereafter her general health was quite re-established, and menstruation became regular and normal in every respect. Eight months after she considered herself pregnant. In this, however, she was mistaken, it proving to be a case of spurious pregnancy. Two years have now elapsed since she laboured under physometra, and, with the exception of the spurious pregnancy and an occasional attack of bronchitis during the winter months, she has continued to enjoy unexceptionably good health. At the present time she considers herself to be four months pregnant, and has just begun to take chlorate and iron mixture, which I hope to be attended with equally good results as on former occasions.

Remarks.—Although most of the conditions necessary for the production of physometra are almost of daily occurrence, yet this pathological state of the uterus is seldomer met with than that of any other, and well-marked cases of it are extremely rare indeed. The obstetrical and gynecological works in my possession simply mention the possibility of the uterus being distended by gas, as the product of the decomposition of a retained placenta or fœtus, but no cases are given, or mention made of works where such cases are to be found reported.

The points worthy of notice in this case, and which may go some length to explain the causation of the disease, or, at all events, indicate some of the prerequisites for its development, are, in my opinion, the following:—

A marked tendency or predisposition to disease of the placenta, and miscarriage.

The early development of placental disease and the obstinate tendency manifested towards its frequent recurrence seems to point to some inherited predisposition. Whether such a habit really exists I am not prepared positively to affirm, but of this much I feel assured, that on several occasions I have observed patients of the strumous and arthritic diathesis to be affected more frequently with placental disease than those of other habits of body. In this case the placental cachexia—if it may be so denominated—manifested itself at the very earliest possible opportunity. Before the patient was five months pregnant with her first child she complained of symptoms which pointed to inflammation of the placenta as their cause, and which, on examination after delivery, proved to be correct. Similar symptoms occurred during the three following pregnancies, but were relieved, and the progress of dis-

ease evidently checked by the administration of chlorate of potash and iron.

The tendency to miscarry which showed itself at a later period was equally striking. In the course of six or seven years eight or nine miscarriages took place, at periods varying from two to five months. As on none of these occasions had she any medical assistance, it is impossible to speak certainly in regard to them. Once only could the neighbour who was in attendance state with any amount of confidence the sex of the fetus. This circumstance of itself would go some length to prove that the greater number of miscarriages took place before, or very shortly after, the *third* month. The abortions or miscarriages appear also, in many instances, to have been imperfect, as copious losses of blood and foetid discharges are reported as continuing for several weeks after their occurrence. A recurrence of such accidents must have led to the retarded involution of the uterus and its consequences. In such a condition of the uterus putrefaction of its contents is not to be wondered at, as several circumstances seemed to favour the admission of atmospheric air into its cavity after rupture of the membranes.

When did gas begin to accumulate in the uterus? The trunk of the fetus removed seemed to have reached four months of intra-uterine life. Death must have taken place very shortly after this date, as the mother, who up to this time, or shortly thereafter, was able to go about her household duties (although by no means enjoying an average degree of health), was closely confined to bed from low typhoid symptoms. It is impossible to suppose that putrefaction long preceded the development of the typhoid state; and it is equally certain that the physometra cannot have existed long prior to my visit. Such a condition of the uterine contents as was discovered was incompatible with the continuance of life, far less the enjoyment of ordinary health. Once putrefaction of the fetus, etc., was begun, the generation of gas might be the result of a few days only. That the woman considered herself six or seven months pregnant would seem to militate against this explanation of the sequence of events. Much reliance, however, could not be placed in the mere sensations of a woman whose uterus was distended with liquid and gaseous contents, and solid bodies of considerable size floating through them, after the uterus became a closed cavity by the firm contraction of the internal os. In order to explain the occurrence of putrefaction it is, of course, necessary to take for granted the previous patency of the os, which would render more easy the rupture of the membranes, and the admission of atmospheric air, if it could be proved that the subinvolted uterus possessed some degree of suction power. The persistent contraction of the internal os which followed is to be explained in no other way than by reflex action due to the irritating nature of the uterine contents.

Only another point suggests itself. Was the fœtus, prior to putrefaction, fully developed, or was the loss of the arms, legs, and head the result of the action of putrefaction? An examination of the contents of the uterus afforded reason for the supposition that a portion, at all events, of the fœtus was subjected to disintegration and solution. The resorption of any of the fœtal structures is physiologically impossible, but that they might be broken down and dissolved, and thus discharged, is quite possible. The presence of flesh, hair, and pieces of bone in the liquid discharged from the uterus, as also its consistency, lend considerable strength to this supposition. The only other explanation is that the deficiency of the fœtus was due to arrested development, and the purulent contents resulted from putrefaction of the membranes and placenta. This latter theory, however, would leave unexplained the presence of bone, etc.

ARTICLE VII.—*The Hygiene of the Infectious Fevers.* By J. W. MILLER, M.D. and L.R.C.S. Edin., Consulting Physician Dundee Royal Infirmary, Examiner in Medicine and Pathology, Aberdeen University.

(Continued from page 315.)

THERE is ample authority for holding it established that in small-pox and measles infectiousness exists very early—in the beginning of the prodromal stage of measles, or last day of the incubative period;¹ and in smallpox “infection is also possible during the period of incubation, which is generally free from every symptom of the disease.”² Marson also states³ that “smallpox is communicable from the moment the initiatory fever begins.” Speaking of measles, Squire says,⁴ “it would not be too much to say that one-half of all the cases met with are contracted during the premonitory or catarrhal stage.” Hooping-cough is infectious before the child hoops.⁵ This is clearly proved by a case given by Dr Haddon of Manchester; and Stephenson holds⁶ that no child who has not had the disease should be sent to school if suffering from a cold or cough, however slight.” So also with measles, how often it happens that a child continues at school with catarrhal symptoms till the rash appears. It must be remembered that these extreme precautions are only called for during epidemics, or at other times in the case of children from infected households. In scarlet fever⁷ also and diphtheria infection appears to be present from the com-

¹ Thomas, *Ziemssen's Cyclopædia*, vol. ii. p. 58.

² Curschmann, *Ziemssen's Cyclopædia*, vol. ii. p. 335.

³ See Squire, *op. cit.*, p. 12.

⁴ *Op. cit.*, p. 12.

⁵ Squire, *op. cit.*, pp. 10 and 32.

⁶ *Op. cit.*, p. 56.

⁷ See Thomas, *Ziemssen's Cyclopædia*, p. 171.

mencement, although increasing in intensity as the case progresses. Stephenson¹ suggests that when diphtheria is epidemic it may be advisable to absent from school all cases of apparently common sore throat. If these doctrines as to early infectiousness be true it is obvious that there is much danger in the almost universal custom, which is, that isolation is not put in operation until the infectious nature of the disease is beyond doubt; whereas the only safe course is that this should be done immediately on the appearance of suspicious symptoms, and rigorously persevered in till it is certain that the disease is not of this nature. Dr Page holds the same opinion.²

The Lancashire and Cheshire branch of the British Medical Association seven years ago appointed a committee, at the request of Dr Ransome, to investigate the duration of infection, also the period of incubation, and the commencement of infectiousness; and in 1877 Dr Haddon of Manchester read a paper giving the results up to that date. By his courtesy in sending me his manuscript I am enabled to utilize these. Although the data are not very numerous they are valuable, and afford an example by following which much information might be gained. In the course of his remarks he says, "One fact well established by the returns deserves special notice, namely, that in measles, scarlet fever, whooping-cough, and mumps, infection is being spread before we can diagnose the disease. If these diseases have the power to spread infection so early, it is probable, from what we know of infection generally, that other diseases, such as smallpox, typhoid fever, etc., have the same power."

A correct knowledge of the duration of the incubative period is important in reckoning backward for the origin of cases, and for giving directions as to the length of quarantine necessary before healthy persons who have been exposed to infection can be considered safe. This period varies considerably both in different diseases and at different times in the same disease. The following is a statement of the duration of the period of incubation in each of the diseases named, as given by several good authorities:—

PERIODS OF INCUBATION.

<i>Cholera.</i>	Authorities.
2 to 3 days, exceptionally 1 to 2 days. Average does not exceed 1 week, though one or two weeks is by no means rare; a longer time is excep- tional,	Lebert, <i>Ziemssen's Cyclopædia</i> , vol. i. p. 397.
2 to 3 days or less,	Goodeve, <i>Reynolds's System of Med.</i> , vol. i. p. 139.
A few hours to 3 days,	Bristowe, <i>Treatise on Theory and Pract.</i> <i>of Med.</i> , vol. i. p. 233.

¹ *Op. cit.*, p. 51.

² *Op. cit.*, p. 6.

*Smallpox.**Authorities.*

10 to 13 days; extremes, 5 to 14 days,	{ Curschmann, <i>Ziemssen's Cycl.</i> , vol. ii. p. 341.
13 days,	{ Marson, <i>Reynolds's Syst. of Med.</i> , vol. i. p. 434.
7 to 8 days (inoculated),	{ Bristowe, <i>op. cit.</i> , p. 164.
12 or 14 days (counting to eruption), ¹	{ Gregory, Geo., M.D., physician to Smallpox Hospital, 1832, <i>quoted by Squire—Further Remarks on the Period of Infection, etc.</i> , 1876, p. 1.
11 days in one case, 13 days in another,	{ Haddon.

Enteric Fever.

10 to 14 days (sometimes immediate),	{ Budd, Dr W., <i>quoted by Tanner, Pract. of Med.</i> , vol. i. p. 244.
Average, 21 days; extremes, 2 to 4 weeks,	{ Liebermeister, <i>Ziemssen's Cycl.</i> , vol. i. p. 56.
Most commonly about 2 weeks; may be more or less, and may be so short as 1 or 2 days,	{ Murchison, <i>Treatise on Contin. Fer.</i> , p. 469.
May be shorter than 14 days, and as long as 24 days (4 returns), . .	{ Haddon.
10 or 12 days, and may be only 4, . .	{ Squire, <i>Period of Infection, etc.</i> , p. 41.

Typhus Fever.

12 days, frequently shorter, rarely longer,	{ Murchison, <i>op. cit.</i> , p. 91.
5 to 14 days—extreme, 21 days, or even more,	{ Bristowe, <i>op. cit.</i> , p. 182.
1 or 2 to 12 days,	{ Tanner, <i>op. cit.</i> , vol. i. p. 230.
5 to 7 days, or even 1 day,	{ Lebert, <i>Ziemssen's Cyclo.</i> , vol. i. p. 308.

Scarlatina.

A few hours to 10 days,	{ Aitken, <i>Science and Pract. of Med.</i> 4th ed., vol. i. p. 337.
Probably less than one week; may be no more than 24 hours,	{ Gee, <i>Reynolds's Syst. of Med.</i> , vol. i. p. 334.
6 to 8 days, rarely longer, often shorter, even 1 day,	{ Bristowe, <i>op. cit.</i> , p. 155.
4 to 7 days (Thomas quotes other authorities for occasional longer periods, up to 14 days. In a successful inoculation case it was 7 days,)	{ Thomas, <i>Ziemssen's Cyclop.</i> , vol. ii. pp. 169 and 170.
A few hours to 11 days at most (8 cases),	{ Haddon.
Within 7 days (generally)—may be only a few hours. Longest met with, 8 days,	{ Squire, <i>Period of Inf.</i> , p. 35, and <i>Further Remarks on Per. of Inf.</i> , pp. 7 and 12.

Diphtheria.

2-5 days (other authorities quoted for longer periods, exceptionally even to 14 days),	{ Oertel, <i>Ziemssen's Cyclo.</i> , vol. i. pp. 594 and 595.
A few hours to 8 days,	{ Bristowe, <i>op. cit.</i> , p. 204.
Within 8 days. May be within 30 hours,	{ Squire, <i>Per. of Inf.</i> , etc., p. 35; <i>Further Remarks, etc.</i> , p. 7.

¹ Dr Squire follows Dr Gregory in including the period of invasion in the period of incubation. This is somewhat apt to cause confusion, for most authors limit it to what is otherwise called the "latent period." Thomas, *Ziemssen's Cyclop.*, vol. ii. p. 57, speaking of measles, says that it should be held to terminate with the commencement of the fever.

Relapsing Fever.

Authorities.

Immediate, up to 14 days (founded on observ. of 12 cases, when period exactly fixed—3 being immediate, others varying),	} Murchison, <i>op. cit.</i> , p. 331.
3 to 7 days—oftener over than under 5 days, and sometimes extended into second week,	
	} Lebert, quoted by Murchison, <i>loc. cit.</i>

Measles.

12 to 14 days—extreme, 7 to 21 days,	Bristowe, <i>op. cit.</i> , p. 149.
10 days,	Thomas, <i>Ziemssen's Cyclo.</i> , vol. ii. p. 61.
13 or 14 days,	Aitken, <i>op. cit.</i> , vol. i. p. 305.
10 days at least to 14 days at most (9 cases),	} Haddon.
10-14 days,	
7-14 days—usually 10 or 12—extreme, 17 days (reckoning to rash),	} Squire, <i>Period of Inf.</i> , p. 14, and <i>Further Remarks, etc.</i> , p. 2.

Hooping-cough.

5 to 6 days (doubtful),	Aitken, <i>op. cit.</i> , vol. i. p. 559.
Probably about a fortnight,	Bristowe, <i>op. cit.</i> , p. 142.
Generally a week,	Squire, <i>Period of Inf.</i> , p. 34.

Looking at the variation of range here shown, it is somewhat difficult to make practical application of the information. An average will not do, because about as many cases would exceed as fall within a limit so fixed. The only method available is to carefully consider the weight of the different opinions, and, adding a considerable "margin of safety," fix a definite number of days as that which should be held to be the incubative period. Because a *definite* period must be decided on, it would be nearly useless advice to a school proprietor about to disperse his pupils on account of an outbreak of some infectious fever, to say to him, "You must delay them for from seven to twenty-one days." In fact no physician would do so; he would fix some limit for himself, and the evil at present is that another, though not really differing much in opinion, may at haphazard name a shorter or a longer period, much to the mystification of the public.

The difficulty is even greater of knowing when infectiousness terminates; and it is quite impossible for us, as seems frequently to be expected, to name a day within which it is present, and beyond which the danger has disappeared. Trustworthy data to settle this question can only be gathered from the carefully recorded experience of good observers in cases where the source of infection was the only possible one, and the day of the infecting person's illness at which infection occurred was accurately known. Such cases are few. Some observers give instances of extreme prolongation of power to infect, but it is most difficult to exclude from one's mind the possibility of fomites being the explanation; and when the period far exceeds that generally observed, this theory would appear the more reasonable one. And caution must be exercised not to fix a longer period than safety imperatively requires,

because that period is sufficiently protracted to tax patience to the uttermost. It is a fortunate provision that these disease-germs gradually perish by natural processes; "like all organic substances which propagate from minute or invisible beginnings, myriads perish for one that is fruitful."¹ If it were not so, the world would have been depopulated long ere now.

Squire remarks that diseases with a long incubative period generally cease to be infectious comparatively early in convalescence, and *vice versa*; this reminds one, except that it is the converse, of the meteorological aphorism, "long threatened, long last; short warning, soon past;" but I suspect there are many exceptions. Dr Page² sums up in one paragraph his opinion, holding that the risk of infecting lasts "so long as the diarrhoea or looseness of the bowels in typhoid fever or cholera continues, so long as the least particle of peeling skin in scarlet fever or measles, and of scab in smallpox, is seen upon the face, hands, or feet, and *for a fortnight* after the apparent disappearance of these signs of infection; and by experience it is found that no patient is free from infection until six weeks from an attack of typhoid fever or cholera, measles or diphtheria, and two months in the case of scarlet fever. No case of scarlet fever is safe, and no child recovering from scarlet fever should be received at school, until the end of the eighth week from an attack. By neglect of these precautions children will almost certainly bring infection with them, and with the result that other healthy children will carry it to their homes." Professor Stephenson does not demand so much; he says,³ "For safety, isolation in the cases of scarlet fever should extend to seven weeks. In measles the period is shorter, but four weeks is the shortest limit. In diphtheria a patient is not free from the risk of communicating the disease until the throat is perfectly well, even although convalescence is otherwise established." He goes on to say that for whooping-cough "two months is the shortest limit that can be assigned," and that in typhoid fever "the power of communicating infection often continues long after convalescence." Of this disease Aitken expresses the same opinion.

Regarding typhus, Murchison⁴ considered the contagion to be strongest "from the end of the first week up to convalescence, when the peculiar odour from the skin is strongest, and that the body ceases to give off the poison as soon as the fever subsides, and the appetite and digestion are restored;" and that during the first week there is little danger. He does not say that there is none.

As to measles I have already quoted Page and Stephenson. On the margin of his pamphlet kindly sent to me by Dr Squire,

¹ Aitken, *op. cit.*, vol. i. p. 218.

³ *Op. cit.*, pp. 23 and 24.

² *Op. cit.*, p. 4.

⁴ *Op. cit.*, p. 93.

he writes, "that three weeks of convalescence, calculated from the cessation of the specific febrile action, would suffice. Prudence might suggest that an additional week should be allowed." This would give five or six weeks from the commencement of the illness. It is generally considered, and with much reason, that it is nearly hopeless to attempt to limit measles in a family; but Squire states,¹ that "when children have been kept apart during the earlier stages of measles the limitation of the infection is possible." It is surely desirable to attempt limitation, for this disease causes many deaths, the annual mortality in England alone having been as high as 12,255; and the lowest since 1850 having been 4895. In Scotland during 1876 it was 1241.

But scarlet fever is in this connection beyond question the most important of these diseases, both on account of its great fatality, and the frequency of sequelæ often entailing life-long infirmity and disablement. In 1878, 18,842 lives perished from this cause in England; in 1870 the number reached 32,543. In Scotland during 1876 it was 2364. The infection is also very intense and persistent. Thomas says² that the shortest exposure may suffice, and quotes in proof, that "a mother after remaining only a moment with a scarlatinous patient, immediately returned home, a distance of about six miles, but communicated the disease to her children." He considers the contagium less volatile than that of measles, and that it consequently spreads less rapidly through a house.³ He says that "it is certain that the contagiousness diminishes as health becomes restored, but it is impossible to say when it ceases."⁴ He doubts that the contagium is exclusively or even chiefly contained in the desquamating scales of epidermis, and states that it may be presumed that it "enters from the blood into all secretions and excretions of the patient." It appears to me that Gee⁵ puts the matter correctly when he states his opinion, that the disease does not cease to be contagious till "those natural fomites, the epithelial scales, which were existing at the time of the fever have been removed; or, what is nearly the same, not until desquamation has ceased." He goes on to say, "Uncovering a scarlet fever patient in the direct rays of the sun, a cloud of fine dust may be seen to rise from the body,—contagious dust, which, no doubt, subsides into every crevice near the bed;" and he admits the possibility "of the contagion having been conveyed hundreds of miles by letter or similar means." When attached to clothes especially, and shut up from the air, it may retain its activity for very prolonged periods. Gee gives an instance on the authority of Watson, where a strip of flannel was the medium at a year's interval; but indeed several remarkable examples are recorded. Too much importance is however prob-

¹ *Period of Infection, etc.*, p. 17.

² *Ziemssen's Cyclop.*, vol. ii. p. 164.

³ *Loc. cit.*

⁴ *Op. cit.*, p. 172.

⁵ *Reynolds's System of Med.*, vol. i. p. 33.

ably attached to desquamation as a measure of the duration of infectiousness, because it is in some cases unusually rapid, and completed before infectiousness has disappeared.¹ Squire² writes that "scarlet fever continues to be infectious long after all remnants of local morbid action are removed, so that personal contagion may persist for nine or ten weeks from the commencement of an attack." Dr Haddon gives two cases in which it was communicated eight weeks from the beginning of the illness.

Diphtheria is held by Bristowe³ to continue infectious into advanced convalescence, even when "patients have been apparently well for two or three weeks." He says⁴ that "the contagion is doubtless for the most part carried by the atmosphere,"⁵ but that it may also be conveyed by fomites, and thus present prolonged vitality "several weeks or even months." The opinions of Stephenson and Page have already been given. Squire says⁶ "the persistence of personal infection for from four to six weeks is abundantly proved." Its contagiousness appears to be very capricious; we all see many cases in which it does not spread, and yet the proofs of its intense infectiousness at times are unquestionable; if any one doubted this, the tragic history at Darmstadt surely convinced him. It would appear to bear some proportion to the severity of the case.⁷ I do not at all agree with those who, when mild cases occur, recovering quickly, leaving no sequelæ, and not infecting others, dismiss the subject by holding that they were not cases of diphtheria at all; there is no wider difference between such a mild case and a severe one in which the diagnosis is beyond question, than between a simple and a malignant case of scarlet fever. It is well to remember also that now and again the infection from one of these mild cases may give rise to the worst form in an individual predisposed to throat mischief.⁸

It is most difficult to determine when the infectiousness terminates in whooping-cough. There can be little doubt but that it is frequently at an end a considerable time before the cough disappears. West, however, says⁹ that he would hesitate to restore a child to the society of children unprotected by a previous attack, until the cough had ceased. I have stated Professor Stephenson's opinion, that two months is the shortest period which can be allowed before a patient can be considered safe from conveying the disease. Of course by fomites, if he continue to wear infected clothes, he may spread the disease for some time after this. It is with regard to whooping-cough that the widest difference of opinion prevails, but, as I have already stated, I cannot

¹ See Squire, *Further Remarks on Period of Infection, etc.*, p. 5.

² *Period of Infection*, p. 12.

³ *Theory and Practice of Medicine*, p. 204.

⁴ *Loc. cit.*, p. 203.

⁵ Oertel teaches the same, *Ziemssen's Cyclo.*, vol. i. p. 586.

⁶ *Further Remarks, etc.*, p. 4.

⁷ Oertel, *op. cit.*, vol. i. p. 585.

⁸ Oertel, *loc. cit.* ⁹ *Diseases of Infancy and Childhood*, 4th ed., p. 429.

believe that rigorous quarantine precautions in the early cases of an epidemic would prove wholly ineffectual in at least limiting its spread.

Indeed, it is only at the beginning of an epidemic of any of these diseases that decided success of sanitary measures can be looked for, just as it is only by arresting the first leak in the dyke of a reservoir that the inundation can be averted; and however great the hardship of quarantine to the first affected individual households, it would be as a drop to the ocean when compared with the aggregate of suffering after the epidemic had attained its full development.

In conclusion, my object has been to lay before you as concisely as possible the opinions of some leading authorities, as an aid towards the formulation of definite rules having special reference to the duration of quarantine precautions which safety demands; and if the Association see fit to act on my proposal, I would further suggest for its consideration, whether it might be expedient to have such rules printed and circulated amongst the lay public, perhaps adding some plain instructions as to the details involved in isolation, for example, as regards attendants, clothes, books, toys, etc., and also as to the best methods of disinfection. It is scarcely necessary to say, that I do not contemplate that it should be attempted to coerce individual practitioners into any particular line of practice, even if power to do so existed, which it does not; but it appears to me that such an endeavour as I have indicated, to terminate if possible the conflicting practice which at present prevails, is quite within the legitimate sphere of action of the Association.

ARTICLE VIII.—*Remarks on Obstetrics.* By DR G. HAMILTON, Falkirk.

(Continued from page 333.)

WHEN there is a prospect of the forceps being required, I find, as Dr Bell said in one of the discussions at the Edinburgh Obstetrical Society, that the fetal head has entered the pelvis *mostly* transversely, and I generally do not trouble myself much more than to ascertain where an ear is in relation to the symphysis, and whether the face is turned to the right or to the left side. If the ear is to the right of the symphysis, and the face is also to the right, I know I have a favourable position, because *if the head turn* it will not encounter the rectum; while, on the contrary, if the ear is on the left side of the symphysis, with the face to the right side, the case is not so favourable, because, probably, the head will revolve to the left, and the face pass towards the pubes; while, again, if the face is to the left, and the ear near the

symphysis, the revolution will probably be to the left, and unfavourable, because in doing so the face will encounter the rectum. But really I do not care much about the exact position the head occupies, for I find practically that, with my powerful forceps, I can modify the position greatly, and especially that I can throw the head back and make it revolve round the pubes without making any lateral revolution at all, or, in other words, without the face passing into the hollow of the sacrum; and that this, indeed, is a usual way in which my deliveries take place.¹

Although I have said that I don't care where I catch hold of the head when it is at the brim, my practice almost always is, when the head is more advanced, or is what has very properly been called intrapelvic, to follow the rule of Smellie and Burns, and apply the first blade of the forceps over an ear. Now, I wish particularly to direct attention to the consequences which I say *necessarily* follow from being guided by this rule, and also by the one I have previously enunciated as to the second stage of labour not being allowed to continue much more than two hours; for, I say, the practitioner who does so will be all but *compelled* to follow my obstetric practice in what have been considered its two chief peculiarities, viz., a frequent use of the forceps, and using these antero-posteriorly.² Let me take, 1st, the rule as to the second stage of labour, and say that the practitioner resolves to act up to it. Well, I say that if he does so he will, in a vast proportion of the cases, find, where the head is intra-pelvic, that an ear will be found, as I have often said, "at or near the symphysis pubis." So large is this proportion, that, excepting where the face presented, I would classify my 202 forceps cases thus: 2 to 4 per cent. at the brim; 1 to 2 per cent. with the head or face in the hollow of the sacrum; and nearly all the rest with an ear at or near the symphysis pubis. But again, if I am correct in this, how can I do otherwise than apply my forceps antero-posteriorly? My forceps are straight; but even Smellie's double-curved forceps were applied in this way, as is seen in his plates; and all the slightly curved modern forceps *must* be applied nearly antero-posteriorly if these two rules be attended to. On a former occasion I said that I had not delivered a case with the forceps for fifteen years where the face had turned into the hollow of the sacrum, and then only in assisting a midwife, and the reason obviously was, again, because my first rule made me anticipate this portion of a natural but retarded labour. Curiously enough, since I said this, two of my

¹ Of course I am "behind the time o' day" in deciphering modern obstetric hieroglyphics, L. O. A., R. O. P., etc. Students, I suppose, know all about it. Might I suggest, however, in the interest of the older readers of your Journal, that in the reports of presentations the exact position of an ear, and where the face pointed to, should be, when possible, indicated?

² Of course he might turn or open the head, but either, I think, would be bad practice until the forceps had been found to fail.

forceps cases (both in my last series) have had the face in the hollow of the sacrum, and I found that these were not quite so easily managed *with my instrument* as when the ear was at the symphysis, principally because I had to get the patient more over the side of the bed than I usually do in order to reach the ear. This probably is the reason why the old (and a good many modern) practitioners have preferred the short double-curved forceps, and liked also to deliver with the patient on her back—regarding which I shall have something to say immediately.

From all that has been said, it will be seen that somewhere about 96 per cent. of my forceps cases have been of the simplest possible character, at least as I usually treat them ;¹ and I cannot also help saying that the house surgeon in a maternity who cannot treat them is not in his proper place. In fact, I think it right that it should be said that, if lives are to be lost at our maternities because the cases occurred during the night, and it was thought inconvenient to rouse the principal physician, or because he had been otherwise engaged in private practice, the whole matter will come some day to be unpleasantly ventilated in our newspapers. I beg respectfully to bring this point specially under the notice of the gentlemen who are managers of maternity hospitals. Great improvements in midwifery practice have taken place in the last fifty years, and maternities must keep abreast of these or fall into disrepute.

As to my mode of applying the forceps, or as to the instrument which I use, nothing more, I think, need be said at present, as these have repeatedly been already described, and the forceps can at any time be seen at Mr Young's, surgical instrument maker in Edinburgh.² Among the negatives in my practice which I have not mentioned I have great pleasure in referring to the almost

¹ Dr Wilson, in his excellent valedictory address to the Edinburgh Obstetrical Society, in remarking on my 190 forceps cases with two foetal deaths, says, "But, as Dr Macdonald pointed out at the time, these cases, as a rule, are very simple." Certainly; this is what I say. In one of my papers on this subject I have said that most of them with my forceps, and as I have used these, have been almost as simple as vaccinating. But—and *this is the important point*—my forceps practice, where the child has been healthy and the mother moderately well formed, has been almost free from foetal deaths. With due submission, therefore, to Dr Wilson, I would say "but" is not the proper term he should have used. It should have been "and, fortunately," for surely neither he nor Dr Macdonald would speak depreciatingly of this saving of foetal life.

² As furnished by Mr Young, they possess great power; but, as I have often said, I try to add to them additional grip by smearing the inside of the blades with indiarubber paste mixed with a little chloroform. On this point I made the following interesting little experiment:—I placed an elastic band round the handles, an inch from their extremity, and fixed the forceps on a board, at the end of which was a pulley. I then took a croquet ball, and also an indiarubber balloon, each $3\frac{1}{4}$ inches in diameter, and placed these, after being rubbed over with grease, within the blades of the forceps, a cord, having a bag at the end of it, being attached to each of them, and passed over the pulley.

total absence of injuries either to child or mother. Among the twelve children delivered with the forceps, in my last cases, the only thing I noted in one child was slight twisting of the mouth for two or three days, all the rest of the forty being healthy, uninjured, fine children.

In the Maternity report it is said two cases died after birth; and in Dr Johnston's practice no less than 11·5 per cent. of the children born alive where the forceps were used are given as dying shortly after birth. Nothing of this kind has happened in my practice; and in looking back on the whole 202 forceps cases I can recollect only one child in which as much as a slough the size of a sixpence formed under the ear while using my old forceps, and it taxes my memory to recollect more than a very few (say four or five) in which the whole 1411 children did not do well.¹

Coming now to the mothers, I note, first, that in the Maternity the neck of the bladder seems to be frequently injured. In Dr Croom's paper on the use of the catheter, in this Journal for May 1878 (formerly quoted by me), I find the following:—"Dr M'Culloch, one of the present residents in the Maternity Hospital, has noted for me the cases where retention of urine has occurred after perfectly normal primiparous labour during the past two months. Five such have occurred, and in each there has been a more or less extensive rupture of the perineum." And in the report given in your May number, one patient, it is stated, required to have the water taken off daily for two weeks; while, in my own practice, I class this as one of the negations, as I have said elsewhere, that for thirty years I have not required to use the catheter either before or after delivery.

The bag was then weighted till the forceps yielded, with the following results:—

	Indiarubbered.	Plain.	Greased.
Croquet ball,	7 lbs.	7 lbs.	5½ lbs.
Balloon,	3¼ "	1½ "	1 lb. 11 oz.

It will thus be seen that the indiarubbing added nothing to the power of retaining the croquet ball, which touched only single points, but that it added very greatly to the adhesive power in retaining the balloon, where it grasped a large surface, as it does on the child's head.

I submitted, also, an indiarubber ball, 4¼ inches diameter, and painted, to the same process, with these results:—Forceps indiarubbered and ball plain, 8 lbs. and 9 lbs.; forceps indiarubbered and ball smeared with gruel, 8 lbs.; forceps plain and ball smeared with gruel, 8¼ lbs., 8½ lbs.; forceps greased and ball smeared with gruel, 6 lbs. Greasing the forceps, therefore, evidently makes us lose considerable adhesive power.

¹ No doubt maternities, from the prevalence of syphilis among such patients, are in a very different condition, both as to mothers and children, from those in private practice, and a good deal must therefore, independent of practice, be allowed for the after-birth infantile mortality. As to the mothers, I sympathize very much with the gentlemen who have to attend them, although such has fallen to my own lot occasionally. Where life is concerned, however, we must do our duty, though I confess I have felt this to be about the most disagreeable, not to use a stronger word, to which I have been exposed in my professional career.

Injuries to the mother at all, indeed, may be also placed among the negations of my practice. In my "Demonstration on the Use of the Forceps" at the Edinburgh Obstetrical Society, I mentioned a shocking case of sloughing of the vagina that occurred to me in 1833, when I had only the short double-curved forceps; but since I began to use Ziegler's straight forceps, I think in 1835 or 1836, sloughing of the vagina, *et hoc genus omne*, have been absolutely unknown to me, except in one case, some twenty-five years since, when slight vesico-vaginal fistula formed. Among the 40 patients last attended one woman said, when I was applying the forceps, that I was hurting her, and on examination I found that the hinge had caught the vaginal mucous membrane, inflicting a slight cut about an inch long, and this is all that I can say has occurred to me in the whole 1411. In regard to rupture of the perinæum (that is, of the *skin* of the perinæum) my immunity from injury goes even farther back, for, since the time when, in 1832, I commenced as a student attending midwifery cases, I have never *known* that such a thing occurred to any of my patients. I have said this in your Journal more than once before; and although it may seem paradoxical, I could almost have wished that I had had at least *one* case to justify, and perhaps explain to me, what seems to be so common an injury at the Maternity, as well as in the hands of many other practitioners. In casting about in my own mind for some probable explanation of this, I have sometimes asked myself, "Can it be mere carelessness, and neglect of Professor Hamilton's well-known rule as to supporting the perinæum, to push the head with the ball of the palm of the right hand firmly forwards and upwards?" or is there any other cause of these lamentable "accidents?" Many of these injuries, I notice, have occurred where the forceps were used; but this was not the sole cause at the Maternity last quarter, for there were only four forceps cases, while we are told that the tearing in six was severe. The tear in the occipito-posterior case "terminated instrumentally"¹ was dreadful; and such a case in the country, I am inclined to think, would half ruin a man's practice for many years, for these cases, which may be classed among the *opprobria* of our profession, won't hide. Even in large towns, most surgeons know (and some to their cost) how a case of this kind, occurring in genteel life, becomes part of the professional gossip of the day, and also, I have no doubt, of the female gossip too. The subject is so delicate that one is almost afraid, in asking for an explanation, of probing the subject to the bottom; but I say, in casting about for one, I have sometimes thought it possible that the position the patient is placed in during delivery, and the mode of delivery, may possibly account for at least a part of such cases. To explain what I mean, let me take, first, a simple natural case, in which Professor Hamilton's rule is attended to.

¹ It really would have been satisfactory that the instrument or instruments used had been mentioned.

Well, what does the practitioner then do? Does he not *force the head to revolve round the pubes*? and is not this the very fact which specially distinguishes my mode of delivery with the forceps? I am often asked by others in what position I place my patient while using the forceps. Of course I say, "On the left side;" when my interrogator will sometimes say, "Not on the back, then,"—as if it were immaterial which of the two positions the patient occupied; indeed, from his point of view,—that is, if he still allowed the face to get into the hollow of the sacrum, and used a short double-curved forceps,—the back would seem the more convenient and natural position, for he could then most easily carry out Smellie's and Burns's excellent rule of placing one blade of the instrument over an ear. In adopting this position, however, he sacrifices, to a great extent, 1st, the possibility of supporting the perineum effectually with the hand; and, 2dly, he must, from the blades of his forceps being placed transversely in relation to the pelvis, instead of antero-posteriorly, as I generally use them, make the head descend mostly downwards towards the rectum. I suppose it has been to avoid this that the curve has been so tenaciously retained in short forceps; but I have shown, in my paper in the *British and Foreign Medico-Chirurgical Review* for January 1872, that whatever form of forceps is used, you cannot, from the measurements of the arch of the pubes, give the revolving movement when the blades of the instrument are placed transversely; while, when placed antero-posteriorly, the blades can go up nearly to the top of the arch,¹ and I may add that the leverage power that my instrument

¹ In an ordinary female pelvis the width of the arch formed by the rami of the pubes is, at its lower, middle, and upper portions respectively, $3\frac{1}{2}$, $2\frac{1}{2}$, and $1\frac{1}{2}$ inches. My forceps measure, from blade to blade at the widest part, $2\frac{5}{8}$ inches, and, *across each blade*, only $1\frac{1}{2}$ inch. Sir J. Simpson's, M. Duncan's, Ramsbotham's, Beatty's, and the old short forceps, all measure, inside the blades, more than mine; Simpson's $\frac{3}{8}$ ths of an inch more. Tarnier's are $2\frac{1}{2}$ inches; Barnes's, 3 inches; Leishman's, $3\frac{1}{4}$ inch; Denman's, $2\frac{1}{2}$ inches. Now, beside the advantage referred to of thus enabling me to throw the handles *forwards* when the blades are applied transversely, it is evident that it makes Simpson's and others of the same dimensions simply double hooks, or tractors, when the compressed head is under three inches diameter; while mine can *lay hold* of a head with a diameter of $2\frac{5}{8}$ inches, and, as I have often said, converts forceps and head into a bar, as it were, for leverage, which in certain cases I so much employ. I have had no experience, except for a year or two at the very commencement of my practice, in applying the double-curved forceps, so that I can speak of them only theoretically. But this property of *laying hold of the head* seems to me an important one in *any* forceps, especially in saving the perineum from injury by enabling the operator to give a *forward* direction to the head; for, if the head be not laid hold of, the handles may be moved forwards (as a pendulum moves backwards and forwards) without the position of the head being affected. This would manifestly be the case, for example, with Simpson's forceps when applied transversely (and I suppose they always are transverse at delivery), as in Smellie's 4th and Ramsbotham's 52d plates, if the diameter of the head were under 3 inches. In such a case the force applied *must remain only traction*. All that could be done would be to alter slightly (not much, evidently, from the great width within the blades) the

has in making the head revolve in this way is enormous. It is true, all my cases are not finished with the forceps remaining antero-posteriorly. Still, my practice is invariably, even when the blades of the forceps are transverse, to throw the handles as much as possible forwards; and, when the perinaeum seems in the least too much distended, I either, while using them with one hand, support the parts with the other, or remove the instrument altogether and treat it as an ordinary case. It will thus be seen that, as I use the forceps, in all my cases the handles go forwards and upwards—that is, *away from the perinaeum and rectum*, sometimes to an extraordinary degree, as I have stated in my papers. Even in my cases when the face is to the pubes I apply the unfenestrated blade, as usual, anteriorly, over the face (as I have not found the *solid* blade injure the child), and make the handles revolve as I have mentioned. I would, for example, have probably used them so in the “persistent occipito-posterior” case, and thus, I think, have greatly removed the pressure from the perinaeum and rectum. The case being “persistent,”—that is, I presume, the head having long remained in the position mentioned,—and my forceps being applied (suppositiously) antero-posteriorly; would have afforded me an excellent opportunity of performing my favourite revolution. From the small percentage of my forceps cases, however, where the head has been allowed to get into the hollow of the sacrum before the instrument has been applied, it will be evident that, in such a case as this, the forceps would probably have been used before it had become occipito-posterior, as in the case I have reported in this Journal for May 1879, page 996. In that case the face was to the right side, and an ear to the left (or *wrong side*, as I have called it) of the symphysis when I applied the forceps; but the forceps turned round with a jerk, and the head came away occipito-posteriorly, or it might have come away without turning at all, with the forceps still fixed nearly antero-posteriorly, as so often happens to me. I must now bring this very long letter to a close, and am, dear Sir, yours truly,

G. HAMILTON.

P.S.—I believe ladies reserve the specially personal bits of their correspondence for the postscript; and I also have a little personal “bit” to speak of, which I have reserved. I may therefore say,

direction in which the force was applied. Whereas, with my forceps, the width within the blades being only 2½ inches, there would be ½ this of an inch of *pressure power* for converting the head and forceps into the “bar” I have spoken of; and this, too, whether the forceps were applied transversely or antero-posteriorly. All proper forceps, therefore, I would say, should be able to lay hold of the head, but still not to compress it so much as to injure the child. My own practice surely proves that the head *can* be safely compressed to 2½ inches. Besides the foregoing, there is another consideration which follows from this comparison; for, obviously, my forceps can *lessen the head*, by elongating it, ½ this of an inch more than Simpson’s, and thus in this way also facilitate delivery. See further on this subject the *British and Foreign Medical-Chirurgical Review* for January 1872, p. 180, etc.

first, that both in a former communication to you and at present I have tried to be as explicit as I have thought it possible for me to be in regard to the absence of perineal rupture from my practice; and, second, that after my former note to you I had expected to have seen an apology from your "critic" for the rather unpleasant insinuation contained in the word "shocked," which was used by him, but that I have looked in your Journal in vain for such. I am the more constrained to allude directly to this subject, as I have been told that the criticism was understood in Edinburgh to be a special "hit" at another member of the Obstetrical Society and myself.

As my papers on obstetrics have been scattered in the pages of several periodicals, I beg to refer those who may wish to know more of the details of my practice to the *British and Foreign Medico-Chirurgical Review* for April 1853, and October 1871, and January 1872; to the *London Obstetrical Journal* for June 1878; and to the *Edinburgh Medical Journal* for Feb. 1879.

APPENDIX.

Just as I am closing this letter (which, bit by bit, has swelled to the length of a "paper") a case has occurred to me illustrating so forcibly points in my practice, that I give it in as few words as possible:—

Mrs G., primipara, æt. 37, healthy, stout make, average height, fattish, stated to be at the full time. Called on Aug. 18 at 2 A.M. As pains not very strong, I left her, but she states that they continued at intervals during the day and evening, and on till 11 P.M. of the 19th, when I again saw her, still in the first stage of labour. Was called again on the 20th at 3 A.M., when the second stage was threatening to begin. Called again at 5 A.M., when the labour had fairly got into the second stage. From this time I began dilating the os uteri for about an hour, when I got the uterus over the head. The face was to the right side, and an ear was a little above the symphysis. A hand, also, could be felt down in the pelvis by the side of the head, being the first case of the kind I have had in my long practice. Though not at all exhausted, the patient had got tired, and asked me, at 6 A.M., if I would not "use the instruments." As the case had been making very little progress I did so, and the child was born at 6½ A.M. In using the forceps I applied the first blade over the ear at the symphysis, and the other took its place itself. When fixed, the blades were exactly antero-posterior, and when the child was delivered they remained in the same position.

While being delivered the patient lay on her left side, and had her nates near the top and front of the bed: the nurse was in the opposite corner, drawing up the knees and allowing me to pass the handles of the forceps between the limbs; while I, as the head

came down, was mostly *in the bed and near the nurse*, pulling the forceps *up* with both hands; or, later on, and out of the bed, *pushing the handles of the forceps up* with the right hand, and supporting the perineum with the left; and, at last, taking the forceps off, and “shelling out” the head with the right hand.

The child was asphyxiated, and required the lungs to be inflated a few times, but then did well. The skin of both mother and child was not in the very slightest degree injured, and both subsequently did as well as it was possible. The child's head, next day, measured across with calipers, was $3\frac{3}{4}$ inches immediately above the ears, and, from the same point to the centre of the opposite parietal bone 4 inches, so that my forceps could get an excellent hold of it.

My conclusions regarding this case are, 1st, that, though the first stage of labour was very protracted, no interference whatever was called for: 2d, that had the labour been left, or almost left, to nature in the second stage, the child's life would almost certainly have been lost; 3d, that had chloroform been used for hours, even the use of the forceps could hardly have saved the child; 4th, that turning would have been improper, because the application of the forceps was the easier as well as the safer procedure.

Let any one who wishes to study such a case as this (and it is quite worth being studied) take a pair of straight forceps and a bony pelvis, and make the curve with the forceps I have described, and he will see that, not the face or the occiput, *but the side of the head*, must have passed into and swept along the curve of the sacrum in delivery. Where, let me ask, in ancient or in modern obstetrics, except in my own papers, or in others referring to them, do we find a statement of this fact? And yet it occurs in a large proportion of my forceps cases. If it had a German name it might perhaps some time be thought one of importance.

But, to end this long palaver about the forceps, it makes one think that some imaginative poor fellow commencing practice might have a dream on this forceps question, in which he would find it in a queer state,—some grasping the head in one way, some catching it in another; one saying that the pelvis is a *rifled* curved tube, while another says it is sometimes only a curved tube; some saying that double-curved forceps are the best, others that they use only straight ones; some holding that you should grease the forceps to enable you to introduce them, another saying that this is all nonsense, and that they should be indiarubbered to prevent them slipping; some makers giving indentations for tapes to tie the handles, while others say, “Pooh, pooh! that is now out of date;” some holding that none but a surgeon “in practice” should be allowed to apply the instrument, some thinking that no one should *be allowed to be a surgeon* who cannot apply them; some holding that both blades should be fenestrated, one that it is the fenestrae mostly that cut the child's head, and that therefore it is

well to have one solid; one holding that the forceps is a double lever, another that it is only a pincers, which, with the child's head, becomes the bar of a simple lever when used; one that it has very little power, most that it can be made a "crusher;" some holding that it is only a tractor, or double hook, or pendulum, while others hold that it can be made a tractor, a lever, a compressor, or all three together; some using the instrument in every third case, some once in six hundred cases; some liking a big curve to the instrument, some a small one; some using a forceps 8 inches long, some 18 inches long; some adding a traction-rod and handle and a screw to their forceps, while others say the simpler theirs are the better they like them; some saying that the forceps are apt to split the perineum, others that they never saw such a thing; some saying they should be applied in the first stage of labour, while others say, "Nothing of the kind." This having been said rather energetically, it may be conjectured disturbed the dreamer, for he awoke, so that, unfortunately, no more of his fancies (or of the ingenuities of others) can at present be recorded. G. H.

ARTICLE IX.—*A Case of Extra-Uterine Pregnancy, Rupture, and Death from Hemorrhage, with Results of Post-Mortem Examination.* By WILLIAM WILSON, M.B., C.M., Resident Physician to the Edinburgh Medical Missionary Training Institution and Cowgate Dispensary.

(Read before the Obstetrical Society of Edinburgh, June 9th, 1880.)

IN bringing the following case before the notice of the Obstetrical Society, I must claim your indulgence for my mentioning in detail several circumstances which might have been omitted had I prepared the paper solely with a view to its obstetric interest; but as, from the first, the questions involved were as much of a medico-legal character as of an obstetrical, I have described the case in full, and have not since had an opportunity of recasting the facts which are of special interest to the obstetrician.

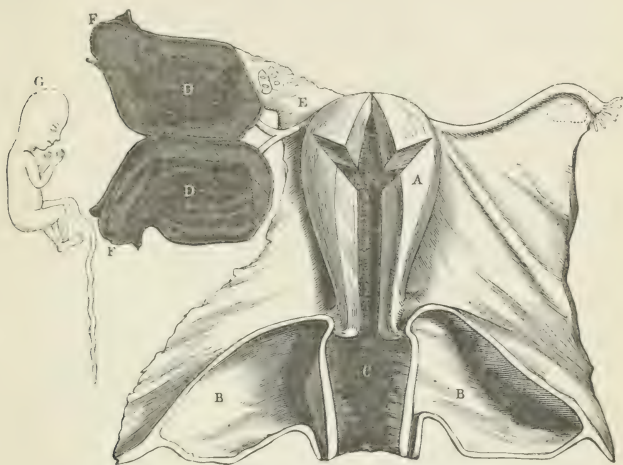
The patient, Mrs Howard, aged 45, living in the Cowgate, having taken seriously ill on the night of 21st May, sent the following morning at 8 o'clock to the Cowgate Dispensary, and was at once visited by Mr Johnstone, the student in charge of the case. The facts elicited by him were, that at 12 the previous evening she was suddenly seized with severe vomiting and diarrhoea, which persisted throughout the remainder of the night. When he arrived she was suffering from great abdominal pain, with tenderness on the least pressure, face very pallid, and pulse weak. The possibility of irritant poisoning made him inquire as to what she had eaten at her last meal, and she said that she and her husband had partaken of some cod for supper. Having acquainted me with the facts of

the case, I went to see her at 9 A.M., and found her in a markedly exsanguine condition, skin cold and clammy, pulse imperceptible, and heart's beat only faintly discernible, mental faculties quite clear, pupils normal, but sight very dim. This condition suggested to my mind the probability of internal hæmorrhage, and the abdominal pain pointed to its being in this region. But as there was no history of any violence, I suggested to Mr Johnstone the possibility of a rupture of an extra-uterine pregnancy, and on inquiry I found that she had not menstruated since March, and that during the past week she had suffered at times from periodic pains which she described as similar to what she had experienced at the commencement of her previous labours. As these facts seemed all to point in the direction of such an explanation, I proceeded to make a vaginal examination, to ascertain, first, if there was any displacement of the uterus such as might be expected from the development of a tumour in connexion with the tube, and, secondly, to see if there was any uterine hæmorrhage. The uterus, however, was quite normal in position, and there was no hæmorrhage whatever. An attempt at a bimanual examination of the uterus was rendered abortive by the extreme tenderness of the abdominal wall, and the only other fact I elicited was, that great pain was felt on passing the finger into the posterior fornix. So far the evidence afforded by vaginal examination seemed to be inconclusive, if not directly against an extra-uterine pregnancy, and I was thus led to put greater weight on the intestinal condition as being the initial lesion, and attributed the collapsed condition and abdominal pain to the violent irritation of the alimentary canal caused by either some injurious article of diet or the criminal administration of poison; the more so as, on inquiry, it appeared that her husband, who had partaken of the same food, had suffered from the same symptoms, though in a much less aggravated degree. She had by this time ceased vomiting; and as the probability, therefore, was that the poison or irritating food had been eliminated, I merely ordered her a mustard poultice to the abdomen to relieve the pain, and two opium pills to restore quiet to the alimentary canal.

At 2 P.M. I saw her again; she had had no return of the vomiting or diarrhoea, and the abdominal pain was much abated. She spoke with much greater ease than on my previous visit; in fact, she seemed, and she expressed herself as feeling, better. The exsanguine condition was, however, as marked as before, and the pulse still imperceptible. At half-past five a message came to say she was worse, and in my absence Mr Johnstone visited her, and found her comatose, and respiration barely perceptible, and a quarter of an hour later she expired. Having secured a sample of the vomited matter, I acquainted Dr Littlejohn with the case, and had the body removed to the police office.

The following is a description of the conditions met with in the examination made the following morning:—The whole body pre-

sented an appearance of extreme pallor, the mucous membranes being completely blanched. On opening the thorax the lungs did not collapse, but presented an unusually voluminous appearance, almost obscuring the pericardium. The heart presented the charac-



A, Uterus laid open anteriorly by a vertical mesial incision, and exposing to view a well-developed decidua lining.

B and C, Bladder and vagina similarly laid open by prolongation of the incision.

D, Tubal sac with greatly attenuated walls, continuous with the walls of the healthy portion of the tube.

E, Posterior layer of broad ligament, turned up so as to expose to view the ovary, which contains two corpora lutea.

F, Rent in walls of tubal sac through which fetus escaped, and through which is now seen protruding the blood-clot which, after escape of the fetus, completely filled the tubal sac.

G, Fœtus found lying loose in a quantity of semi-coagulated blood.

teristic condition peculiar to gradual death from hæmorrhage. Both ventricles contained decolorized blood-clot, that on the right side being firm and white in the ventricle, and gradually becoming softer and darker as it passed into the pulmonary artery, where it bifurcated and passed into its two subdivisions; the clot on the left side having the reverse conditions—firm and white in the aorta, and becoming softer and darker as it passed into the ventricle. On opening the abdomen the liver was seen to be very anæmic, as also were the kidneys. The abdomen contained a considerable quantity of blood-stained fluid, and the viscera in the pelvis and lower part of the abdomen were concealed from view by a large quantity of loosely coagulated blood, probably about a pint. On carefully removing this blood the fetus was found loosely imbedded in the blood, and measured about 3 in. long. The umbilical cord was torn across about 3 in. from the umbilicus. The uterus was found to be

slightly enlarged, but its position as regards the pelvis was normal. The left ovary and Fallopian tube were of normal appearance. As regards the right Fallopian tube, the proximal portion for the length of $1\frac{1}{2}$ in. was of natural size and appearance, but at this point it became merged in a large oval tumour about the size of a lemon, of firm consistence. The wall of this tumour was of firm, glistening material, which on section was found to be continuous with the wall of the healthy portion of the tube. The whole contents of the pelvis were then removed together, and after hardening in spirit were carefully examined, with the following result:—The enlarged uterus measured externally 4 in. long, 3 in. wide, and 2 in. thick. On laying it open by a vertical mesial incision through the anterior wall, a well-developed decidua was exposed to view. The only abnormality as regards the left tube and ovary was the presence of a false membrane connecting the upper border of the tube to the ovary. The ovary was normal, and contained no corpus luteum. Next the tubal sac was laid open by a longitudinal incision, which exposed to view the greatly attenuated walls of the original tube, which in two points were extensively lacerated, and through the rent was protruding a mass of coagulated blood, which was continuous with the similar mass of coagulum which occupied the whole interior of the sac. Between the back of the uterus and the tubal sac extended a delicate membrane carrying bloodvessels, and resembling in appearance a mesentery. The right ovary was situated in close relation to the posterior aspect of the sac, and on being laid open presented to view two corpora lutea. Such being in brief the main circumstances of the case, one or two questions of considerable interest present themselves.

First, a woman in the apparent enjoyment of perfect health is suddenly taken ill at 12 o'clock at night with violent vomiting and purging, and when seen at 9 A.M. is suffering from abdominal pain and tenderness, pulse imperceptible, skin cold and clammy, but mental faculties in full play, and she sinks at 5 o'clock in the evening, 17 hours after the onset of the illness.

With such a train of symptoms no one, I presume, would arrive at a definite diagnosis without allowing the possibility of irritant poisoning to occupy a prominent place in his speculations as to the probable cause. Add to this the two significant facts, upon which the medical jurist would undoubtedly lay great weight—1st, That the symptoms came on shortly after taking a meal; and 2d, That the only other person who partook of the same meal was similarly affected, though in a minor degree.

The next circumstance of interest as to its assumed bearing on the differential diagnosis between rupture of a tubal pregnancy and a case of irritant poisoning is the presence or absence of uterine hæmorrhage. Relying on the fact that such a rupture is generally accompanied by more or less menorrhagia, I examined with this object, but, finding no hæmorrhage whatever, I was led, and as

circumstances proved wrongly led, to abandon as less probable the obstetric explanation, and to attribute the symptoms to gastric and intestinal irritation. I have since observed, in Dr Barnes's remarks on this question, that he lays very great stress on the uterine hæmorrhage. His words are: "The pain is a constant phenomenon, the hæmorrhage not less constant. I have several times pointed this out in discussions at the Obstetrical Society. It strengthens the analogy with abortion; and I believe the phenomenon is so frequent that it may be regarded as indicative of what is going on in the sac." The third point of interest to which I would draw attention is the coincidence subsisting between the initial symptom of vomiting and diarrhœa, and what the post-mortem examination has revealed as the true cause of death, namely, the rupture of a tubal pregnancy. And the question naturally arises, Are we to regard the vomiting and diarrhœa as the effect of the rupture or the cause of it? Doubtless all the symptoms before enumerated would naturally be expected as the result of the rupture—namely, local pain, vomiting, pallor, prostration, imperceptible pulse, and death from collapse. But in addition to these was diarrhœa, a symptom not generally regarded as a necessary consequence. On the other hand, the significant fact that her husband, who partook of the same food, was similarly affected, points, I think, to the probability that the violence of the vomiting and diarrhœa was really the cause of the ultimate rupture, and that the occasional pains which she had experienced during the week were due to the preliminary stretching and slight laceration of the distended tube, which was finally ruptured by the strain put upon the system in the act of vomiting.

ARTICLE X.—*Case of Placenta Prævia Terminating Spontaneously.*
By ROBERT LUCAS, M.D., Dalkeith.

ON the 31st of July last I was requested to visit Mrs R., aged 31, who was expecting her fifth confinement to take place in a few weeks. As the result of inquiries made at the patient, I learned she was between the eighth and ninth month of pregnancy. Up till this period she had enjoyed very good health, but on the day previous a clot of blood had escaped from the vagina, which had somewhat alarmed her. All her former labours had been at the natural term and normal in every respect.

An examination of the os uteri revealed the fact that it was situated high in the pelvis, but sufficiently dilated to admit the tip of the finger. A spongy mass could also just be touched all round, and the finger came away tinged with blood.

Feeling confident I had a case of placenta prævia to deal with, I explained to the patient that the nature of her case would necessitate absolute rest in bed for the future until her confinement

was over, which would probably be in about three weeks. Patient accordingly continued to rest in bed, and, further than experiencing a slight sanguineous discharge with some very small coagula almost daily, she continued in good health and spirits. She also occasionally felt some pain, but not such as to cause her much uneasiness. I may here also mention that the foetal movements were strong, and the stethoscope proved that the foetal heart was vigorously at work.

The os remained in the same condition for eight days after my first visit, when, on the morning of the 8th of August, I was summoned at 6 o'clock to come and see my patient, who was now said to be in labour. On reaching the house half an hour afterwards, the nurse informed me that the "after-birth" had come away, and on getting to the bedside I found this to be the case, the placenta lying in the bed just as it had been expelled. I immediately separated it, and found it was of average size and apparently normal in structure. There was very little discharge lying near the placenta, not more than a few ounces. I now made a vaginal examination, and found that the head was presenting and already engaging in the pelvis. The os was nearly fully dilated, soft and yielding to the touch.

Mrs R. then informed me she had felt some stronger pains than usual coming on the previous night, but that she had managed to get some sleep till about 2 in the morning, when the pains became more severe and accompanied by a slight discharge of blood each time. After this hour foetal movements ceased, but patient assured me she had felt them the evening before. On getting out of bed between 5 and 6 A.M., she was scarcely a minute on the floor when, during a pain, a sudden gush came away, which she supposed was the waters. An examination of the place where this had taken place so far bore out the patient's statement, as it was evident the waters and some blood had at this juncture been discharged.

Immediately after this occurrence patient got into bed, and after several pains was conscious that something had come away, and I was sent for accordingly. As the pains continued very feeble, I gave a dose of the liquid extract of ergot, and in about an hour pains came on which gradually increased in power, and about 8 o'clock, or two hours after the expulsion of the placenta, a female fetus was born, well nourished and perfectly developed in every respect, and, from its appearance, not far from maturity.

During all this time since my arrival there was no hæmorrhage from the uterus, which contracted thoroughly, and the patient expressed herself as feeling quite as well as she had been accustomed to experience on former occasions. The patient made an excellent recovery.

ARTICLE XI. — *Tubercular Leprosy*. By J. LABONTÉ, M.D.,
M.R.C.P. Edin., Mauritius.

(Continued from p. 426, vol. xxiv.)

CASE III.—A. —, 19 years old, a creole. Born in a country district. Was vaccinated with success when a child, was not nursed by his mother, and was never seriously ill in infancy. Are eight in the family. Father and mother living.

History.—Served as an apprentice in an engineer's workshop for nine months, during which time he felt a prickling in the face, without any burning or itching sensation.

Actual Symptoms, May 1871.—Face swollen and of a purple hue, with blotches on the right cheek-bone, both ears, nose, and chin. Eyes injected, vision indistinct. Breathing difficult, tubercles in the nostrils, but no epistaxis, thickening of the nasal mucous membrane. Throat inflamed, voice impaired. Sense of smell paralyzed, taste perfect. No blotches on the back or chest. Blotches over left shoulder, elbow, wrist, and dorsal aspect of the hand. No numbness in the fingers. Blotches over right elbow and on palmar aspect of the wrist; no numbness. Anterior and posterior aspects of both thighs covered with large patches, which are insensible; buttocks and knees in like condition. No swelling of the lymphatic glands. Appetite good. Sleeps well, but with much snorting. Heart and lungs sound.

Note.—This case, which is an instance of tubercular leprosy almost in the incipient stage, is brought forward in illustration of the disease being connected with elephantiasis of the leg. Patient's father, who was under my care for some time, is affected with the latter disease. In all other respects he is a strong and stout-looking man, enjoying in appearance perfectly good health.

CASE IV.—F. —, a creole lad, 15 years old. *History*.—Disease was first noticed four months ago.

Actual Symptoms, May 1871.—Body is covered all over with patches characteristic of the disease, except hands and feet. Some of those patches are insensible, others are of blunt sensibility. Face is slightly swollen, and has a sort of metallic lustre, and tubercles may be felt under the skin, over the cheeks, in the cheeks, and in the lobules of the ears. The nose and upper lip are swollen, submaxillary glands too—thyroid much so. Does not complain of his throat, but says that it burns occasionally. Voice clear. Appetite good. Sleeps well. Hair falling off. Eyes injected (*sclerotics*); burn sometimes. The skin on the lower extremities looks cracked. Disease is becoming daily more manifest on the face. Liver and spleen much enlarged, as sequelæ of the fever. An uncle on the maternal side died of tubercular leprosy. The mother had elephantiasis of both legs.

Note.—This case is a farther illustration of the disease being in some way manifestly connected with elephantiasis of the leg.

CASE V.—Not to go into long details, I may briefly state that, in illustration of the disease being connected with tubercle in the lungs, I have attended cases where the only surviving member of families, when all the rest have died of acute phthisis irrespective of age, is suffering from leprosy, either tubercular or atrophic.

CASE VI.—Mrs P——, 44 years old, a creole, born in a country district, where she has always resided. Was never seriously ill before; was vaccinated. Never had children. Says that no member of her family was ever affected with leprosy.

History.—States that four years ago there appeared a slight blotch, with a certain amount of swelling over the nose, which she was told by her medical attendant was a ringworm, for which she had drugs—Picis liq., and other ointments; but all to no effect. There was at the same time an itching sensation in the nose, and later a sort of numbness. One year afterwards the same sort of blotch showed itself on the left cheek, without any swelling. No further information.

Symptoms present, Oct. 1873.—Face much swollen and of a purple hue. There are large tubercular patches on the forehead, on the cheeks, and on the chin, some having their sensibility, others with blunt sensibility. Nose is very much swollen indeed; there are horny-like concretions in the nostrils. Breathing difficult; no epistaxis. Sclerotics injected, eyesight impaired on the left. Hair and eyebrows falling off. Well-marked leonine appearance. Palate and throat normal. Voice nasal. Sense of smell paralyzed. No blotches on the back or chest.

Muscular atrophy of both arms is far advanced. On both there are large blotches of a purple hue, with blunt sensibility. Fingers of right hand are swollen and flexed; movement in them impossible.

Middle and little fingers of the left hand are flexed. The hand is in like manner quite insensible and of no use. Patient can lay hold of nothing, and has to be fed and dressed by some one else.

Both legs are also much atrophied and covered with blotches of a purple hue, which are quite insensible. Both ankles and feet are swelled; patient cannot wear shoes. Can walk, but with extreme difficulty; says that both legs feel heavy and are painful, that the plantar aspect of the feet feel queer, and that she could not tell whether she is standing on a board or on the ground.

No swelling of the glands. No appetite, no sleep. No perspiration. Has her catamenia regularly. Heart and lungs healthy.

This is a mixed case, in which, however, the atrophic or nervous symptoms were predominant. Family history is very incomplete.

and nothing further could be elicited from the patient, who seemed unwilling to make any disclosure.

CASE VII. — M——, a creole woman, 35 years old. *History*.—Eighteen months ago the disease broke out as a white blotch on the forehead. Patient thought it was only a ringworm, and went through a course of purgative medicine, without using any external application. Shortly afterwards like blotches broke out on the left arm and leg, accompanied with much pain and swelling. At the same time bullæ showed themselves on the index, middle, and ring fingers of the left hand. The swelling in the arm extended from the elbow to the hand, and in the leg from the knee to the foot. There were no bullæ on the leg. Paralysis of the left side followed subsequently with much pain, especially at night. After the bursting of the bullæ all the fingers of the left hand became flexed. In the interval the blotch on forehead had spread generally to the face. Patient underwent medical treatment for four months; wished to go to some hospital to be treated, but not to St Lazare, which she did not like.

Symptoms, November 1870.—Face swollen; large tubercular patch of considerable thickness on the forehead, cheeks, nose, and upper lip. Breathes by the mouth, feels much inconvenience in the nostrils, sometimes feels pain in the throat, no ulcerations; sensibility blunt in the face. Feels pain all over her body. Left arm is paralyzed and atrophied; left arm paralyzed and fingers flexed considerably. On the left leg there are large insensible blotches, characteristic of the disease. Eats and sleeps very little. Catamenia regular. Has had children. Habitual constipation.

The family history in this case is incomplete, patient stating that she knows very little about her ancestors. She made no attempt at concealment.

This is another instance of the mixed form, where again the atrophic or nervous symptoms were predominant. Many more examples might be cited, even the case of children; but I think the above sufficient to illustrate the mixed form.

Typical cases of the purely atrophic form of leprosy are of common occurrence, but they seldom come under treatment in the early stage. I must, therefore, trust to memory for the symptomology of such cases as I have seen and treated. As was noticed before, those cases, just like those of tubercular leprosy, are, generally speaking, hereditary; but the patient need necessarily not be the offspring of parents who may have had the atrophic form. Muscular atrophy is very likely the earliest symptom here, and it is rare that a few fingers are not already flexed when the patient is seen for the first time. On close examination there will generally be found on the hands or on the fingers ulcers very much resembling burns, undergoing the process of healing, or bullæ in the act of forming, or which have only very recently burst. Those symp-

toms, however apparent and troublesome, are not what mostly attract the patient's notice, but he comes rather on account of blotches, generally of a white aspect, most commonly seated on the forehead, cheeks, and chin, and in which sensibility may be existing or wanting. If the body be inspected generally, patches of different sizes and of the same colour will invariably be found in the extremities, and even sometimes on the trunk, and in which sensibility may yet be good or abnormal at various degrees. Till then there is nothing very particular in the patient's appearance, and such a condition may long continue without great changes. In the progress of time, however, the fingers may become more flexed, one or more phalanges may ulcerate and drop off, and the face assume that peculiar appearance we saw before, which, although it be not so hideous as in tubercular leprosy, is nevertheless very characteristic of atrophic leprosy, the lower eyelid being reversed, the eyeball exposed and watery, the face more or less dragged to one side or to the other and wrinkled, the lower lip pendulous, saliva escaping freely. Patient at the same time walks very much like an hemiplegic, and is unsteady in his gait. The last symptoms, however, very often do not show themselves, and the only indication of atrophic leprosy to the experienced eye in cases of already some standing are the flexion of the fingers, muscular atrophy of the extremities, and white patches over the patient's face, the lower extremities being sufficiently sound to enable the patient to go about his business. The reverse is seen in other cases; the face, as a whole, looking well, except that it has a peculiar shining lustre as if smeared with grease; but the disease is readily detected by the appearance of patient's hands and feet, which may have been reduced to mere stumps, or to which only one or two fingers or toes may have been left attached. I have already said enough as to the evolution and duration of the disease, and the pain both moral and physical attendant thereon; but before entering upon the treatment of leprosy, I must notice, in connexion with the disease, the state of the intellect of the patient and the activity of the generative system. So far as I have been able to see and judge for myself, the intellectual powers of many, especially of those belonging to the higher orders of society, have appeared excellent and highly developed. They are an interesting class of patients, perfectly conversant for the most part with all that is known or has been written on the subject. Up to the last, I have known their intellect perfectly clear. As to their sentient feelings, they are of the extremest delicacy; being conscious of their misery, they will carefully shun the company of strangers to spend their lives in voluntary seclusion. Even with patients belonging to the lower order of society, it has not appeared to me that the intellect ever failed; but from want of cultivation they are short of that delicacy of feeling to be found in the other instance; being, as it were, unconscious of their wretched condition, there is no reticence with

them. Among the young and educated, I have known instances of suicide in the second stage of the disease. As regards the activity of the generative system, there is evidence to show that it may as often exist as it may have died out.

Treatment. — Is leprosy, tubercular or atrophic, amenable to medical treatment? We all well know that throughout ages leprosy has always been considered incurable and as the curse of Heaven. If we look into ancient history and glance at the various ordinances and laws passed with regard to lepers, we cannot but be struck by the fact that, if the disease was classed as incurable in olden times, it is, perhaps, owing to the circumstance that all those who were thereby affected were at once separated from the healthy, and doomed to live and die as best they could where they were sequestered. Now-a-days, however, that those poor wretches have excited the sympathy and, at the same time, the curiosity of other men, their state of disease is being gradually investigated, and medical art has stepped in to devise the best means for alleviating the sufferings of the patient, and arresting the progress of the disease, if not to cure it altogether. I am perfectly satisfied that ere long a cure may yet be found, and that at this present moment we have the means of checking effectually the disease in its progress, and of relieving the sufferings of the patient. Leprosy, tubercular or atrophic, being a dyscrasia, and its poison being specific, I have invariably at the outset of the disease, as well as in its advanced stage, combined alterative medicines with what are commonly called specifics—amongst others, *Chaulmúgra* oil, the fluid extracts of the *Hydrocotyle asiatica*, the *Siegesbeckia orientalis*, *Cassia occidentalis*, *C. rosea* Linn.

I am in the habit of putting the patient at once on 10m of the oil daily, increasing the dose to a maximum of 5j. and 5ij. in very bad cases, provided the stomach be not upset thereby. It is best given at bed-time in some warm bitter infusion: and in case of nausea, Vichy lozenges answer well. The maximum dose is to be lessened gradually as soon as there is a decided improvement in the patient's condition. At the same time, patient is to drink as much decoction of the *Hydrocot. asiat.* as he likes, with the addition of ʒj. of the above compound fluid extract to a bottle of decoction. His diet is to be nutritious but non-stimulating; he is to take what exercise he can in the open air, but in the shade, to get a medicated bath daily (alkaline or sulphurous as the case may be), cold or warm, according to his extreme sensibility to cold or heat. If there be large tubercles, they are to be cauterized with the acid nitrate of mercury; if not large, they are to be rubbed briskly twice daily with an ointment containing from 30m to 50m of the acid to an ounce of cold cream. If there be only blotches or insensibility, the affected parts are to be rubbed briskly with a lotion varying from 5j. to 5ij. of the acid to a bottle of water. In combination with those medicines, patient is to get 3m of the

liq. arsenicalis after meals. The effects of which treatment are, of course, to be watched narrowly.

Complications. — Their treatment has not been invariably one and the same, except as regards iritis. Here a seton at the nape has been in general use when the disease had run in the subacute stage, to be kept open for months to prevent a recurrence of the disease; small doses of the iodide of potassium and of the bi-iodide of mercury in the compound extract of the *Hydrocot. asiat.* being given at the same time, as well as *Chaulmúgra* oil. In the acute stage the ordinary treatment of iritis has been followed. I must mention a very frequent complication in the eye in cases of some standing, whereby vision is impaired by the deposit of tubercular matter in the anterior chamber, where it settles in the form of a crescent, occupying most generally the upper margin of the cornea. This deposit may go on increasing gradually and steadily until vision is lost, unless it be checked in time by washes with the strong decoction of the *Hydrocot. asiat.* and the bi-carbonate of soda, the same salt or the iodide of potassium being at the same time administered inwardly, and the general plan of treatment continued.

Ulcerations in the nostrils are best treated locally by frequently washing out the nose with a lotion of the *Hydrocot. as.* and carbonate of soda, and by the direct application of the ointment of the *Hydrocot. as.*, pure or in combination with the white precip. ointment. Another excellent topical application is the ointment of the white precipitate suspended in equal parts of glycerine and sweet-oil. In obstinate cases a wash of sulphate of copper answers well. Under such local treatment it is seldom that ulcerations do not heal up quickly, tubercles disappear, and the passage of air through the nostrils rendered more easy and free. At the same time that this takes place either in the nostrils or on the septum of the nose, the organ assumes a more normal appearance, the voice becomes clearer, the patient can breathe with his mouth closed, and snorting at night disappears.

Ulcerations or tubercles in the buccal cavity, on the tonsils, palate, uvula, or pharynx, are best treated locally by the direct application of the acid nitrate of mercury in doses varying from 5m and 30m in sufficient quantity of glycerine. Under the combined influence of this local treatment and the constitutional treatment there supervenes a rapid improvement in the condition of the parts. Ulcerations on the hands and feet and on the extremities generally get well under the influence of the alkaline baths mentioned before, and by proper and constant dressing with the same wash. Cold-water dressing has in many cases been tried and preferred by many patients; some have been benefited by the *Hydrocot. as.* ointment, some by the red precipitate ointment, by the tincture of aloes, by the sulphate of copper ointment, etc. Do what we may, however, of all the ulcers most difficult to heal,

those which are situate at the sole of the foot are by far the worst, and they will for a long time continue open, whatever care and attention the patient may devote to them; they may or may not be attended with pain, and may or may not interfere with walking.

Another complication in the calves, with exacerbation of suffering and pain at night, is the constant burning sensation felt by the patient in many cases of some standing. This severe symptom is best treated by the exhibition of the iodide of potassium in grain doses every hour, combined with laudanum, until the symptoms abate. Morphia, chloroform, and cold applications have given relief too. Perhaps subcutaneous injections of morphia might answer well. This is a complication to be met with more in the atrophic or the mixed form of leprosy rather than in tubercular leprosy. Mortification of the soft parts, principally in the legs, in old cases of tubercular leprosy, where the mortification extended from the knee to the foot, threatening amputation at the ankle, has been stopped and cured by the administration of general tonics, bark and phenic acid, by poulticing with the *S. orientalis*, sprinkled over with phenic acid, and by dressing with carbolic-acid lotion when the sphacelus had come off.

The atrophic form, just as the tubercular, springing from the same dyscrasia, the plan of general treatment I pursue is very much the same, save that in the atrophic form neurine tonics come in for a large share. Chaulmúgra oil, the compound extract of *Hydrocot. as.*, are exhibited, medicated baths prescribed, the spine is rubbed with stimulating liniments, wherein ammonia, cantharides, turpentine, and other rubefiants enter. Phosphorated oil is given in small doses preferably to strychnia or the ergot of rye. Electricity is employed with a view of stopping the atrophy in its onward march, and of restoring tone to what muscles may yet remain.

Such is a summary of the means I have been using for the last ten years, with marked benefit to many who have applied to me for relief; and I am glad to say that up to this very moment those means have not failed. The treatment just as I have laid it down is not to be followed uninterruptedly. When I have to deal with patients who are in earnest, and willing to live in the enjoyment of comparatively good health, all active treatment is now and again suspended. Mineral waters, alkaline or sulphur, as the case may be, are prescribed, cold shower-baths, the arseniate of iron, cod-liver oil, and other alterative and tonic medicines. Many a patient, especially of the higher class of society, continues well in this way. Not so when we have to do with a class of patients who will be steady only the time they cannot help doing otherwise: with them the immunity from the disease will be of comparatively short duration, relapses will be frequent, and with each relapse there will come some new complication, until the disease, getting the better of them, will run a rapid course to terminate in death.

I said before that tubercular leprosy has well-marked and dis-

inct intermittences between each successive evolution, varying from months to years, during which the disease will be in *stata quo*, and that the patient has it at his command to shorten or lengthen those intervals. Referring to Case No. 1, the patient, who is now a full-grown adult, has had no relapse; his appearance is pretty fair; he is smart and active; but he very wisely continues to follow out the general plan of treatment as best he can. Case No. 2 kept on well from end of 1871 to end of 1877 without taking any medicines at all, either through carelessness or through poverty; patient at times undergoing great fatigue, either through overwork or amusement, and abandoning completely the sort of hygiene which was prescribed her. She had a slight relapse in the end of 1877, from which she recovered again by resorting to her former treatment. Case No. 6 keeps well; has had no relapse as yet; patient has quite recovered the free use of her hands and feet; has no tubercles whatever. Case No. 7 keeps well; patient is now employed as a servant. Case No. 3 has never been seen nor heard of since patient was dismissed well. Case No. 4.—Patient is dead of enteric fever. I might continue to quote a number of cases to show that many patients keep well, whilst others relapse; but from experience I may safely assert that such relapses are preventible to a great extent if the patient will attend to his hygiene, and continue the use of those drugs which he has found most beneficial in his particular case.

The scarcity, and consequently the high price, of Chaulmúgra oil made me use as a substitute in some cases other vegetable oils, as cocoa-nut oil and the oil extracted from the *Melia Azadirach* (belonging to the order *Meliaceæ*), the latter only in five-drop doses, the former in doses equal to that of Chaulmúgra oil, and that with results just as good; but as in every case the acid nitrate of mercury, in some form or other, was used externally along with other auxiliaries, it is difficult to say with certainty whether or not any preference is to be given them over Chaulmúgra oil, or whether the acid nitrate itself is the best and most active of all the remedies employed. A series of well-conducted experiments might possibly settle the question. I have seen gurjun oil used both internally and externally, but without benefit. I have used the strong tincture of iodine externally, and with good results, on tubercles that could be readily felt and seen beneath the skin. Tubercular leprosy is sometimes associated with other skin diseases, of which prurigo seems to be the most frequent.

It may not be out of place to transcribe the following notes, tending to show what the plan of treatment above described can effect, and what opinion prevails thereon among professional men in Mauritius:—

Writing on the 23d of June 1872, Dr Pastourel says, with regard to Case No. 2, and another case, the history of which does not appear in this paper:—"After having carefully read the history of

both cases you sent me concerning the patients we visited together, I find that I cannot really establish any comparison between their past and present condition; the least I can say is, that the transformation which has been operated by your treatment has been very great. I therefore tell you with honesty and sincerity, that since twenty-five years that I practised medicine in Mauritius I never saw, and in so short a time, so satisfactory results in the treatment of that horrible disease," etc., etc.

With regard to four cases which were under treatment for the space of six months, the report of the medical commission appointed to watch their treatment runs thus:—

The commission must say—

First, That the four patients, all males, picked out by Dr Labonté were in a very advanced stage of the disease, and were consequently very good subjects for testing the value of his new mode of treatment, of which he had announced the efficacy.

Second, That all four patients at the end of the six months' treatment showed an improvement as regards their general condition, their outward appearance, and their moral condition.

Third, That the improvement was more remarkable in two patients than in the others, and was manifest by the flattening, and even the disappearance, of a few tubercles, by the cicatrization of the superficial ulcers of the face, extremities, and of the mucous membranes of the nose and mouth, by the return of tone and sensibility in different regions of the body, and elasticity in the joints, that two of the patients were so much pleased with their improvement that they asked to be allowed to resume their occupations as painter and stone-mason.

Further, the report goes on to say:—"Although those results are very important, inasmuch as they are equally applicable to the four patients treated, the commission thought it necessary merely to record the facts, and expose them in all sincerity in their report, without drawing any inference for the future. Such reservation on their part must be frankly explained, and the following restrictions will prove that it is well founded:—And (1.), although in presence of the results witnessed by the commission, it is evident to them that never in the colony was there at any time obtained like improvement, extending at the same time over a certain number of patients, and within such a short period," etc., etc. The end of that document, which is tolerably long, and written by men who pretend to be unbiassed, is a complete refutation of the premises set forth above. I leave it to others to say whether my judges, all medical men of different schools, and holding different diplomas, acted fairly and *bonâ fide* towards me.

I do not intend bringing forward all the testimonials I hold from patients I have treated, but here are declarations to show that the chief medical officer in Mauritius, who presided at the commission, and who signed the report with other members, was well aware that my plan of treatment was not so bad

after all. He writes :—" I certify that I visited the within named — in company with Dr Labonté, on Saturday, 15th July ; that I found a great amelioration in his condition as far as concerned the leprosy, the tubercles of the face, ears, and hands having almost disappeared. But he was then labouring under œdema of the lungs—dying, in fact, etc., etc. (Signed) C. F. REID, C.M.O." Now, this patient had been ill six years, and had been under treatment only since the 6th of May.

(2.) " I have examined the man named — this day, and find a great improvement in his state. To proceed further, however, and to secure what has already been gained, I consider it very desirable that the treatment should be continued for at least three months longer. (Signed) T. REID, M.D. 30th October 1871."

I shall take no notice of the criticism and judgment passed by unqualified and prejudiced people, mostly all mercantile, who in Mauritius are in the habit of thinking themselves great authorities in matters beyond their comprehension, but will finally discuss the means most appropriate for the prevention of the disease.

Practically in Mauritius, where the disease is fast spreading, as proved by the returns of the Registrar-General, this would consist—(1.) In not making vaccination compulsory as the law directs, unless the local government, in whose hands that business rests, provide the public with genuine and fresh cowpox, of which they should always have a large supply in hand ; and (2.) That the system of vaccination "*de bras à bras*" be for ever done away with, because as dyscrasia existing in the ancestors of the offspring, from whom vaccine lymph is to be taken and implanted into healthy-looking young ones, being for the most time ignored, simple precaution commands that such a step be followed in a community where leprosy rages.

2. That the greatest care be taken by parents to scrutinize as far back as possible both lines of ancestry when marriages are to be contracted by their children, because there is no telling how long the taint of leprosy may continue, and how many generations it will take to wear itself out.

3. That people suffering from the disease be removed to proper hospitals and there treated both medically and dietetically, and submitted to that hygiene which will materially tend to improve their physical and moral condition, and that the practice which has attained of allowing poor sufferers to wander about the streets, squares, and public markets be put a stop to—not that I consider that the disease is catching by contact, but because in the interest of the whole community, of the lepers themselves, and in the name of humanity and of decency, I firmly believe that such measures are necessary in a civilized and enlightened country. The removal of patients suffering from leprosy to hospitals built on proper sites, excludes the possibility of our water-supply being in any way tainted, as must perchance happen under existing circumstances.

Part Second.

REVIEWS.

Pseudo-Hypertrophic Muscular Paralysis: a Clinical Lecture. By W. R. GOWERS, M.D., F.R.C.P., Assistant Professor of Clinical Medicine in University College, Assistant Physician to University College Hospital, and to the National Hospital for Paralyzed and Epileptic. J. & A. Churchill, London.

WERE Dr Gowers entirely unknown, this little book would at once place him in the front rank of the profession. As it is, the highest praise which we can award it is to say that in it Dr Gowers fully sustains his already great reputation as a physician and clinical teacher.

The affection is one of so much interest that we propose to give a somewhat detailed account of Dr Gowers' views regarding it.

Pseudo-hypertrophic paralysis is one of the rarest of all diseases, and the fact that Dr Gowers has personally met with 19 cases not only shows that he is so fortunate as to enjoy unusual practical opportunities, but speaks volumes for his zeal and ability as an accurate observer. We are strongly of opinion that most rare affections, *if intelligently looked for*, will be found to be much more common than is usually supposed.

The first twenty pages of the book are taken up with a concise but sufficiently detailed account of the cases which have come under Dr Gowers' personal observation. The special characters of the disease are then considered in detail, the description being based upon an analysis of 220 cases (44 original cases observed by Drs Gowers, Wm. Adams, and Clifford Allbutt, and 176 cases recorded in medical literature, references to which are given in the appendix).

The remarkable tendency of the disease to affect boys is strikingly shown by this analysis. Of the total 220 cases 190 were males and 30 females, and in the majority of cases the affection appeared before the age of six years. But the tendency of the disease to affect males shows itself not only in the relative number of sufferers, but also in the degree in which individuals of each sex are affected. In girls the disease usually appears at a later date than in boys; the symptoms, too, are less severe, and progress more slowly, or remain altogether stationary.

The congenital character of the disease is then insisted upon. The facts that the affection is essentially a disease of early life; that the earlier it commences the more severe it is; and that, when hereditary, antecedent cases almost invariably occur on the side of the mother, are brought out in detail. The tendency to affect several

members of a family is alluded to, the conclusion arrived at being that more than one-half of the cases is grouped, and that in these the average number affected per family is about three.

In speaking of the hereditary tendency of the affection, Dr Gowers points out that the parents of affected children rarely themselves present any trace of the disease. "This," as Friedreich has remarked, "is not surprising: since females are but rarely affected, and in males it commonly leads to death by or soon after the time of puberty." It is in the collaterals of the parents, brothers, sisters, uncles, aunts of their children, that other cases must be looked for.

In speaking of the causation, Dr Gowers shows that in the vast majority of cases the disease appears to own no other cause than those which exist in and are born with the individual. According to his observation, the affection is less common among the poor than among those who are in comfortable circumstances.

The alteration in the size of the muscles is of two kinds—an increase and a decrease. A sharp distinction cannot be drawn between these two changes, since each may be attended with diminished power; they may be distributed variously in different cases; and the condition of enlargement may pass into, and even be preceded by diminution. The alteration in size of individual muscles is then considered. According to the author, the latissimus dorsi and lower (sterno-clavicular) portion of the pectoralis major are frequently wasted; and since this atrophy occurs in cases which are often otherwise untypical, this point is one of very considerable diagnostic importance.

The characteristic gait is next described. The author agrees with Duchenne in thinking that the oscillation in walking, by which the body is inclined from side to side so as to bring the centre of gravity well over the foot which is on the ground, depends upon weakness of the gluteus medius; but he differs from that distinguished authority and other writers as to the cause of the antero-posterior curvature of the spine which is so conspicuous when the patient is standing. According to Duchenne, the lumbar lordosis is due to weakness of the spinal extensor muscles. "Weakness of these muscles may," says Dr Gowers, "as Duchenne showed, cause the shoulders to be carried far back, so as to bring the centre of gravity of the upper part of the trunk as far back as possible; but, according to his description, the inclination backwards from this cause starts from the pelvis, which is more extended on the thigh bones than normal. But in pseudo-hypertrophic paralysis, in the erect posture, in which posture alone the lordosis is observed, I have found that the pelvis is much less extended—its inclination forwards is much greater than normal. This inclination is probably due to the weakness of the extensors of the hip, and the lordosis is apparently connected with it, since the lowest lumbar vertebra share the direction of the sacrum, the weight of the abdomen falls unduly forwards, and a compensatory backward inclination of the dorsal

spine is necessary to keep the centre of gravity in the normal position."

The peculiar methods by which patients affected with pseudo-hypertrophic paralysis raise themselves from the ground, and the mechanism of these methods, are next described and illustrated by woodcuts. We agree with Dr Gowers that the method of "climbing up the thighs" is of the greatest diagnostic value. We have, however, lately seen it in a typical case of rickets, in which there was no suspicion of pseudo-hypertrophic paralysis. It is not, therefore, pathognomonic of the affection.

According to Dr Gowers, the reflex functions are usually unimpaired. The patellar tendon reflex was absent in several cases in which the atrophy of the extensors of the knee was considerable. Earlier in the disease it was present.

The cause of the absence of the patellar tendon reflex in pseudo-hypertrophic paralysis is a point of considerable importance. In a case which we recently had an opportunity of examining, the knee reflex was quite absent, but the weakness of the quadriceps by no means extreme. In that case the absence of the knee reflex was not, so far as we could judge, accounted for by the muscular atrophy, a fact which would seem to favour the spinal (nervous) as against the muscular origin of the affection.

In all the cases observed by the author, except two, the cerebral functions were unimpaired. Dr Gowers, however, gives due weight to the cases reported by Dr Langdon Down, in which there was mental weakness or even actual idiocy, and concludes that mental defect is not part of the disease, but that the muscular affection is rather more common among children who have mental defect than among others.

Passing now to the pathological anatomy of the affection: The muscular change is, according to the author, primarily interstitial—an increased production of fibrous tissue and fat—the atrophy of the muscular fibres being secondary, the result of the pressure of the interstitial products.

The condition of the spinal cord in one case is given in detail. The specimen was examined by Dr Gowers in conjunction with the late Dr Lockhart Clark. Changes were scattered throughout the entire length of the cord, the most extensive lesion being found in the lower part of the dorsal region, where in each lateral gray substance was an area of disintegration amounting to an actual cavity outside each posterior vesicular column, which, with the caput cornu posterioris and anterior cornu was undamaged. In the lowest part of the *conus medullaris* one group of large nerve-cells had disappeared, and in the lowest part of the lumbar region the processes of the large nerve-cells were less distinct than elsewhere, but with these exceptions the large nerve-cells in the anterior cornu were conspicuously healthy. In considering the significance of the spinal changes found in this case, Dr Gowers

very properly points out that if the lesion and the muscular affection have any connexion, the links of that connexion are entirely unknown. We agree with him in thinking that the result of the examination of this cord was rather negative than positive, and that the changes which he describes were probably secondary.

In summing up the results of his own case and that of others as to the pathology of the affection, Dr Gowers concludes: (1.) That pseudo-hypertrophic paralysis of early life is not a disease of the spinal cord; (2.) That there are no sufficient grounds for supposing that it is a disease of the sympathetic. (3.) That there is no evidence to show that it is an affection of the trophic nerves to the muscles. (4.) He is of opinion that the affection is a primary disease of the muscle tissue—a congenital nutritive and formative weakness of the striated muscle substance. In support of this theory, Dr Gowers lays great stress—too much, we think—on the evidence afforded by a myolipomatous tumour of the spinal cord, which on section was found to present exactly the aspect of a portion of muscle from a case of pseudo-hypertrophic paralysis. The theory that the disease is due to a perverted tendency of development inherent in the germinal tissue of the muscular system is, however, very plausible. “The remarkable relation of the disease to sex; its conspicuously congenital nature in many cases; its character as a disease of development, making its chief progress during growth; its remarkable origin from the mother, *i.e.* from the ovum, almost exclusively—a condition unknown in diseases of the nervous system,—are all facts which, although scarcely constituting proof of this theory, yet harmonize with it in a remarkable way as they harmonize with no other theory of the disease.” In passing we may notice here the striking fact, which seems to be opposed to Dr Gowers’ theory, that in one of his cases (Case 3) the patient was a twin, and that his fellow *was not affected*, though three brothers, one younger and two older, were attacked.

Finally, the diagnosis, prognosis, and treatment are considered. Arsenic, cod-liver oil, Faradization, and systematic muscular exercise are the remedies of chief importance, and sometimes seem to have a distinct effect in retarding the progress of the disease, though in no case could anything like an arrest of the affection be attributed to their employment. Tenotomy is recommended whenever it promises to preserve for a time the power of walking. It should be employed not only to preserve this power, but also because the cessation of the use of the legs means the cessation of muscular exercise—of the physiological stimulus of natural muscular nutrition. In all cases where, from any cause, the patient ceases to walk, the weakness in the muscles rapidly increases. Mechanical appliances are sometimes useful for the same reason.

The text is illustrated by some well-executed woodcuts and a lithograph showing the histological changes in the muscles. An appendix containing an account of the original cases observed by

Drs Adams and Clifford Allbutt, of the first series of cases described by Dr Meryon, of the lipomatous myo-atrophy of adults, and a tabular statement of cases previously reported, follows and adds to the value of the book, which we cordially recommend as the best account of this interesting affection with which we are acquainted.

Pathologie und Therapie der Hautkrankheiten, in Vorlesungen für Praktische Aerzte und Studirende. Von Dr MORIZ KAPOSI, a. ö. Professor für Dermatologie und Syphilis an der Wiener Universität. Wien: Urban & Schwarzenberg: 1880.

Lectures on the Pathology and Treatment of Skin Diseases for Practitioners and Students. By Dr MORIZ KAPOSI, Extraordinary Professor of Cutaneous Diseases and Syphilis in the University of Vienna. Vienna: Urban & Schwarzenberg: 1880.

To any one who has of late years attended the clinique for skin diseases at Vienna the figure of Kaposi is almost as familiar a one as was that of the lamented Von Hebra himself. The middle-sized, bright-complexioned, open-faced man, with jet-black beard and moustache and merry sparkling dark eyes, and pleasant if somewhat Jewish cast of features, who taught so carefully, produced in all an indelible impression, and the book before us is his true reflex. Kaposi, as is well known, wrote under Hebra's directions the last half of the great work on skin diseases which passes under their joint names, and of which the New Sydenham Society has just published the final volume in its English dress. In it, however, Kaposi scarcely appears to full advantage; he seems as if overburdened with the responsibility of maintaining the encyclopedic character of the work, and, though never dry, his style is sometimes laboured. But in his own volume it is otherwise; he is now free and unfettered, and writes *currente calamo*, brilliantly and attractively. In general we have no time to weary of his descriptions, and in parts, at least, these lectures remind us of the best examples of English medical authors,—of Watson, even, and of West. The only German at all like him in interest is Niemeyer. No doubt something of this is due to the colloquial style of a lecture as contrasted with the more formal mode of expression adopted in a systematic treatise. The former method has a vividness of word-painting not always attainable in the latter, the presence of his audience imparting to the mind and ideas of the lecturer an intellectual stimulus which ever stirs him on to fresh exertions.

The opening lecture is devoted to a rapid sketch of the rise of our knowledge of skin diseases, in which the author shows his intimate personal acquaintance with all of importance which has been written on the subject since the earliest times, concluding with

a well-expressed encomium on Hebra, which perhaps no one could better pronounce than he, as no one knew him more intimately in all relations of life. The description of the anatomy of the skin and its appendages is drawn with much lucidity. The author lays stress on the arrangement of the bundles of connective tissue in the deeper layers of the skin, which Langer's researches have brought out, in influencing the direction of the "whorls" in which the hairs are implanted, and ever and anon throughout the work in defining the mode in which cutaneous eruptions are grouped. He also draws attention to the slender amount of inosculation between the subpapillary and subglandular or superficial and deep cutaneous vascular plexuses, as explaining why in many cases skin diseases long remain limited to the surface. Under the physiology, the mode in which absorption of certain substances applied as ointments is stated to be effected is partly pressure and friction forcing the particles through the cuticle, partly to these gaining access to the vessels through microscopic lesions of continuity in the horny layer, and partly to the agency of the sweat-glands by the passage of molecules through their thin walls.

Much interesting information is given regarding the anatomical causes which regulate the manner in which special skin diseases localize themselves, Langer's observations on the direction of cleavage being specially referred to and illustrated; but Kaposi believes that the localization is often due to the plan on which the finer and finest bloodvessels of the skin are arranged. We think this is borne out by the way in which mottling shows itself in healthy children, and by the manner in which pigmentation due to blood stasis in the cutaneous capillaries makes itself visible. The earnestness with which our author insists on the diagnosis being drawn from objective symptoms only is almost amusing. Yet we quite agree with him when he says that by our observation of these we must measure the correctness of the patient's story, not *vice versa*.

Some general remarks on the various therapeutic agents employed are prefaced by observations of much value on treatment in general. The section is worth translation as a whole. We must content ourselves with indicating its scope. After stating that the remedies are few in comparison with the number of individual affections of the skin, Kaposi inquires why it is that well-informed physicians have often the greatest difficulty in curing a skin disease of daily occurrence—say an eczema—though they know and use the very medicaments which in his hands and in those of others are sufficient to obtain certain success? The failure results from several causes. One, that it is commonly believed that, the systematic diagnosis being once established, nothing further is wanted than to turn to a text-book and apply the remedy recommended, and that the disease will forthwith be cured. There are, however, few specific remedies. We must direct our treatment against

symptoms, *indifferent as to the exact form of disease in which these appear*. With the removal of the individual symptoms the disease itself may vanish, inasmuch as it is but the aggregate of these. Again, each disease exhibits very varied symptoms in different stages of its progress. Means suitable in one are injurious or ineffectual in another stage. The same ailment is not alike in different situations, and the local treatment must be altered to suit. "Since, then, we see in the existing symptoms the essential indications for management in all points, we are in a position to treat skin diseases to a certain degree with advantage, though at the moment their intelligent diagnosis may not be quite clear. One must fix one's attention on the morbid changes presented to him, set himself to remove these, and thus at once furnish much relief to the patient—nay, often conduct the case to actual cure." Not only must the remedies be properly selected, but the *method* in which they are employed must be suited to the aim in view; their influence on the sound parts adjoining the diseased areas is to be borne in mind, and the degree of sensitiveness of the individual considered. Three points should therefore be attended to—1. To decide correctly with respect to the individual symptoms in each locality and in each phase of the disease. 2. To define and recognise accurately the tissue changes in relation to which the cure of these symptoms can be locally effected. 3. To know the medicines themselves, and the mode in which they are to be used so as to obtain such tissue ameliorations.

Turning now to the part devoted to special diseases, we remark that the writings of English authors have induced Kaposi to depart a little from Hebra's teaching when he treats of hyperidrosis. Hebra denied that excessive sweating of the hands ever produced eczema, but Kaposi declares the cheiropompholyx of Hutchinson and the dysidrosis of Fox are but acute eczemas combined with excessive perspiration, and, therefore, unworthy of a separate name. He also parenthetically condemns the indiarubber "preserves" worn by some ladies in the armpits to save their dresses, as hindering the evaporation of the sweat by confining it, and thus leading to irritation of the skin.

Though only occasionally discussed in English works on skin diseases, German authors usually include a description of the acute exanthemata, and Kaposi devotes several lectures to measles, scarlet fever, and variola. These are accurately and carefully handled, and we turn with interest to them to learn his opinion on some moot points. One of these is the existence or not of R \ddot{u} theln or German measles. Kaposi holds that no such separate exanthem exists, that such are but mild cases of measles, and that the latter may without doubt attack the same person twice or even three times. He maintains the value of cold baths or the cold pack in lowering abnormally high temperatures, and he regards any sudden disappearance of the eruption, either spontaneously or under the

use of these, as due, not to its being "driven in," but to the occurrence of an important complication. He specially insists on the contagiousness of measles even in its prodromal stage, and the uselessness of separating members of a family, one of whom has shown symptoms of measles, as a means of prophylaxis for others. "After completed desquamation, or about fourteen days from the beginning of illness, a warm bath affords immunity from further contagiousness." The tedious and troublesome swellings of the parotid and submaxillary glands, sometimes the sequelæ of scarlet fever, are, in our author's experience, satisfactorily treated by the application of a plaster, spread on pliant leather or cloth, composed either of Emp. hydrarg. undiluted, or mixed with equal parts of Emp. cicutæ. Kaposi, like Hebra, employs varicella to denote the mildest form of variola, which terminates favourably usually within fourteen days, and often exhibits no trace of secondary fever. He altogether denies the existence of the disease here generally known as varicella, yet later on (p. 334), when discussing the existence or not of an acute pemphigus, he admits the occurrence of a vesicular eruption running an acute course, often in successive crops, and met with mainly among children, occasionally in adults. What is this but our chickenpox? It is singular, if no true varicella of English authors exists, why epidemics of smallpox do not arise constantly, as varicella in our sense is common, and often occurs in the children of persons who are but indifferently protected by vaccination from attacks of variola vera. A graphic picture of hæmorrhagic smallpox is drawn, two main forms being described. In concluding his account of the first of these, the more frequent of the two, Kaposi makes the following startling assertion:—"With respect to this form, vaccination does not seem to provide the slightest protection. *Purpura variolosa* (the term he applies to it) occurs in its absolutely small proportion as frequently in the vaccinated, the re-vaccinated, and in those who have already passed through an attack of smallpox, this being an extremely remarkable circumstance." Out of between 4000 and 5000 cases of smallpox, Kaposi has seen but 13 typical examples of the hæmorrhagic form, surely too small a number on which to found a statement so dangerous as the one we have quoted.

Entering again the domain of skin diseases proper, we find nothing worthy of note under the head of erythemas, unless it be that a duration—an exceptional one, certainly—of months is said to be met with in erythema nodosum. Urticaria is the topic of an interesting and exhaustive lecture, the giant form of Milton finding a place in the description. Attention is properly drawn to the influence of chronic intestinal catarrh, due to unsuitable diet, in leading to nettle-rash, and keeping it up for long in the case of young children. It is shown, too, how urticaria originally set up by the bites of insects continues long after the original cause has been got rid of, owing to a morbidly increased irritability of the

cutaneous nerves. It is rare that zoster proves fatal, and hence one's conceptions of its pathology are mainly conjectural. Kaposi, however, has been able to confirm and extend Baresprung's observations on its morbid anatomy; and, in conjunction with Sattler, found in a case of zoster frontalis hæmorrhage and destructive lesions in the Gasserian ganglion, and well-marked disease of the corresponding spinal ganglion in an instance of zoster lumbinguinalis. Still he is of opinion that disease of the ganglion does not hold good for all cases of zoster, but that the morbid change may be in the spinal cord itself, in the spinal ganglia, or even in a part of the nerve in its course. While the description of the varieties of zoster leaves nothing to be desired, we learn no new fact as to its causation, except that it sometimes follows external injuries. The treatment given omits some remedies of value.

Our author regards most cases of erysipelas as owning a local starting-point,—this being, in rose of the face, often a dental abscess or some inflammatory or ulcerative process within the nares,—and notes that he has often permanently cured such, which had recurred year after year, by teaching the sufferer to prevent the formation of crusts within the nasal cavity.

Pityriasis rubra is still held to be a disease *per se*, no reference being made to Mr Hutchinson's masterly discussion of the subject, in which its relation to other and at first sight remote disorders is clearly shown. Certain variations are admitted from Hebra's original description, as its occasional favourable termination, the resemblance it bears at some period of its course to eczema, the occurrence of fissures, and the rise of temperature sometimes met with. Still Kaposi only includes under the name the severest examples, leaving out the more doubtful or partial or complicated cases. The disease known as lichen ruber will ever remain associated with Hebra's name, although he drew attention to the rarer, the acuminate and more universal form, while Erasmus Wilson, quite independently, first described the flat, less widely disseminated, and more common variety. Kaposi regards both as species of the same disease, and asserts in the most unqualified manner the curative influence of arsenic in both, when the affection comes under notice before marasmus of a severe type has set in. He prefers the so-called Asiatic pills, each of which contains one-twelfth of a grain of arsenious acid. Three daily are taken at first, one additional being added every fifth day till a maximum of eight or ten is reached, and the administration of this number must be persisted in till involution is tolerably well established. The pills are now gradually diminished to six a day, and continued for three or four months, reckoning from the commencement of improvement. An ordinary case requires for cure from 800 to 1500 pills. In an instance of great severity as many as 4500 were needed in all. Acetate of potash, praised by some American authors, has not proved useful in his experience. Of the use of chlorate of potash and nitric acid

administered separately as a means of oxidation, which Bulkley has drawn attention to, he does not speak. Eczema, from its extreme frequency and its obstinate resistance to treatment in some cases, naturally specially attracts us, and we turn eagerly to the lectures devoted to it to learn any new wrinkle. At first sight the thirty pages seem all too little, yet much valuable and even novel information has been compressed into them. The picture drawn is clear and well finished, while the treatment, which takes up ten pages—a comparatively large space in a German work—is judicious and full. The external is dwelt on, however, to the nearly absolute exclusion of the internal, which is compressed into half a page. Even in this, however, Kaposi shows more faith in constitutional medication than Hebra, indicating a gradual revulsion of opinion. We are tempted to quote; but to do the subject justice nothing less than a full translation would do, and for that we have not space. It will well repay any one to take the trouble of translating these lectures on eczema for himself. Under ichthyosis attention is drawn to two points,—one the correspondence in localization with prurigo, the extensor surfaces being, in the milder cases especially, most deeply implicated; the other, that in ichthyosis hystrix the warty outgrowths follow the course of cutaneous nerves, thus linking the disease with zoster. A patient exhibited by Professor Sanders to the Medico-Chirurgical Society lately illustrated this in a remarkable degree.

Lupus and its management forms such a prominent feature of the Vienna school that one turns naturally to the subject to learn what new light, if any, can be thrown on this mysterious and disfiguring disease. Kaposi thinks that the starting-point of lupus erythematosus is not merely in the neighbourhood of the sebaceous glands, but also in that of the sweat-glands, and, indeed, in any element and layer of the skin down to the subcutaneous tissue. The various modes of dealing with this form are fully detailed; still it is evident that Kaposi does not yet feel very sanguine of the result of any particular method. He does not specially refer to tar, which Hutchinson has found of such value; nor does he even allude to the internal administration of iodide of starch, so much lauded by McCall Anderson, but which, so far, has proved perfectly useless in our hands. Interesting, under lupus vulgaris, is its connexion in some cases with a grave form of cancer. Processes of epithelium have been found by Kaposi to run down into the corium within the lupus area, to form there an epithelial network, and thus produce a suitable nidus for, and lead to the development of epithelial cancer. May a similar histological process not occur in those instances where cancer of the mamma has followed long-standing eczema of the nipple? The case is yet unpublished, but we have seen a spindle-celled sarcoma arise in much the same way out of a lupus ulcer. The causation of leprosy—a question which has again been raised by the work of Dr Munro and

the papers of Dr Milroy in the *Medical Times and Gazette*—is not neglected by our author. He regards some physico-geographical condition as probably inducing it, doubts somewhat its hereditarieness, favours the growing belief in its contagiousness, and leans a little to the view that bacteria play some part in spreading the disease. Syphilis is dealt with mainly from its anatomico-pathological side, an aspect which is not often, and then but imperfectly, presented to our view in many of the current treatises. Kaposi first sketches the primary anatomical seat of the cutaneous lesions, and then lucidly shows, first, the relationship which each form of lesion bears to another; how one form develops out of another, and the mode in which involution or ulceration takes place in each. A valuable chapter in syphilis is thus presented to us. No less carefully, and with much originality, are the neuroses of the skin, and the parasitic affections to which it or its appendages are liable, dealt with; but these do not call for detailed notice. The work as a whole reflects the greatest credit on its author, and must be considered the most valuable and generally useful treatise on dermatology which has yet appeared. It is very fully illustrated with admirable, and in most cases original, woodcuts; while the paper is luxurious, and the printing executed in a style seldom met with in German books, at least in those relating to medicine. We have derived much pleasure and no little profit from a careful perusal.

Pharmacopœia of the British Hospital for Diseases of the Skin.

Edited by BALMANNO SQUIRE, M.B., Senior Surgeon to the Hospital. Second Edition. London: J. & A. Churchill: 1880.

WHEN noticing the first edition of this little work, we drew attention to some rather important omissions. These have been fully supplied in the present one, which has appeared so soon after the earlier as to speak well for the favourable manner in which it has been received. Some slight changes are to be met with here and there, and notes relating chiefly to the pharmacy of certain of the less familiar substances have been appended. In its amended form we can confidently recommend this as a useful and handy guide in prescribing for cutaneous diseases.

Annals of the Anatomical and Surgical Society. Edited by CHARLES JEWETT, M.D., associated with E. S. BUNKER, M.D., G. R. FOWLER, M.D., L. S. PILCHER, M.D., F. U. ROCKWELL, M.D. Four Numbers, viz., January, February, March, and April. 1880: New York: G. P. Putnam & Sons.

THIS is really a capital periodical—nicely printed, well got up, and

containing excellent material. The January number is devoted to anatomy. It contains a lecture by Dr J. C. Dalton upon "Cerebral Anatomy," and an original paper by Dr Pilcher upon "Double Monsters." In the first of these articles the author calls attention to the unsatisfactory manner in which the intraventricular portion of the corpus striatum is described by the majority of writers. He specifies Gratiolet, Todd, and Hirschfield as alone giving an accurate account of this subdivision of the brain. The corpus striatum does not end at the posterior border of the optic thalamus, but curves downwards into the inferior horn of the lateral ventricle, and then runs forward again to the anterior extremity of the inferior cornu. It thus has the form of a nearly complete ring, which encircles the crus cerebri and internal capsule. It ends in the "amygdala," a mass of gray matter which walls in the anterior limit of the inferior cornu of the lateral ventricle. In this manner, therefore, we have the same folded or annular form repeated in the interior of the brain which is so evident upon its exterior in the convolutions of the cerebral hemispheres.

The February number of the *Annals* is almost entirely taken up by an exhaustive and interesting lecture by Dr James L. Little of Vermont upon "Median Lithotomy." He contends that this is the best and safest method of extracting a stone, and that it has the following advantages over the lateral or bilateral operations:—(1.) The bladder is reached with greater ease, no muscles are cut, and no vessels of importance wounded; (2.) By the use of proper instruments the stone can be withdrawn without injury to the neck of the bladder or prostate; (3.) There is no danger of wounding the rectum, and the patient usually retains control over his bladder.

A lecture upon the surgical anatomy of the Eustachian Tube, by Dr Arthur Matthewson, constitutes the chief bulk of the March part. It is illustrated by some very instructive figures.

In the April part the article of greatest interest is one by Dr J. A. Wyeth upon "The Anatomical Reasons for Dextral Preference in Man." He endeavours to prove that man is right-handed for two reasons, viz., (1) Because the arterial arrangements of the body are calculated to give a better supply of blood to the right arm than to the left arm; and (2) because the common carotids are so placed that the left side of the brain is richer in blood than the right side. The whole question hinges upon the great size of the liver, which causes the left obliquity of the heart, and thus places some parts of the body at a greater advantage as regards blood-supply than others. He therefore entirely disagrees with Mr Charles Reade, who asserts that "every child is even and either-handed till some grown fool interferes and mutilates it."

It is necessary to mention further that each number of the *Annals* ends with a short sketch of the life of one of the old masters of anatomy or surgery. These are all from the pen of Dr Geo. Jackson Fisher.

On Influenza, particularly the Endemic Form of the Complaint, and its Local Causes. By FRANCIS HENDERSON, M.D., Helensburgh. Reprint from *Glasgow Medical Journal*. 1880.

WE have been much interested in the perusal of this collection of papers, not so much from the careful description of the disease, as affecting such a reputedly salubrious residence as Helensburgh, as from the rather startling conclusion of the writer, that the main factor in the production of the endemic form is the contamination of the air produced by the sewage of Glasgow. It has been proved by the researches of Dr Angus Smith, that the mud deposited along the shores of the Clyde is at present largely impregnated with the constituents of sewage; and that this mud spread out on an extensive acreage of shore contaminates the air, is apparent to the sense of the smell. The novel speculation of Dr Henderson suggests an intimate relationship between this atmospheric contamination and the influenza, and thus opens up, especially to sanitarians, a field of investigation of great importance in the causation of disease, and adds another very cogent reason for preventing the pollution of streams and estuaries with the sewage of our cities.

Notes on Physiology. By HENRY ASHBY, M.D. Lond., Physician to the General Hospital for Sick Children, Manchester. Second Edition. London: Longmans, Green, & Co.: 1880.

THE utility of such a book as this is very doubtful. It is merely a compilation of the leading facts of physiology taken from our standard text-books, and squeezed within the compass of 270 small pages. It professes nothing original; it does not even claim to put its facts in a new light; in short, it is simply a cramming-book for the student. The *Notes on Physiology* are admirably adapted for this purpose, however, and the clear, simple style in which they are written, together with the methodical arrangement of facts apparent throughout the work, show that Dr Ashby is capable of something very much higher.

Annals of Chemical Medicine. By J. L. W. THUDICUM, M.D. London: Longmans, Green, & Co.: 1879. Vol. I.

THE object of this volume appears to be the collection of the results of recent researches in chemistry, and the classifying of them in respect to their application to medicine. The chapters are on very various subjects, as might be expected from the general design. The more purely chemical summaries appear to be of some value. That on diphtheria is very poor. It is difficult, indeed, to understand *what* Dr Thudicum means to "summarize"

in regard to that disease in the pages devoted to its consideration. Scarcely any of the most valuable recent experimental observations made on diphtheria are here so much as mentioned. Hardly more can be said for the chapter on *contagium vivum*. From what source does Dr Thudicum derive the following piece of information? "Among morbid anatomists the hypothesis of living contagion has hitherto found few adherents." We suppose that it would be difficult to name any pathologist of eminence who now denies that hypothesis. Again, what is meant by saying, "The virus of cow-pox . . . has never yet been pronounced to be an organized body, *i.e.*, body consisting of organs"? If this means anything, it refers to the particulate nature of the vaccine lymph, and Chauveau's experiments (which are subsequently alluded to) have surely proved this, confirmed as they have been by Burdon-Sanderson; and Dr Thudicum must be aware that the visible micrococci which the lymph contains, and which have been proved to be the active agents in vaccination, have been observed to develop as such organisms normally do. This observation any one can make who takes the trouble to place a microscopic slide with lymph upon it (the covering-glass being sealed down with Canada balsam) in an incubator, and to watch its condition from day to day.

In the end of this chapter we are treated to summaries of Klebs' views regarding diphtheria. "According to him (Klebs) there is in this disease constantly present a well-characterized form of fungus, the specific action of which has been proved by specimens cultivated out of the human body. But what is said in the foregoing lines is almost all we are vouchsafed to know." If Dr Thudicum knows no more about the microsporon diphtheriticum than is here given, it is not the fault of Klebs; and if he will look in one of the former volumes of the *Arch. f. Exp. Path.*, etc. (we think about the year 1876, but are not sure, not having copies of the journal beside us), he will find an elaborate paper on the subject from Klebs' pen. There are many other sources of information open to him.

Other portions of this volume are not subject to the same strictures. The chapters on biliary pigments, for example, are well worth reading, and on the whole the book is a useful one for ready reference on current chemical topics.

The Ocean as a Health Resort: A Handbook of Practical Information as to Sea Voyages for the Use of Tourists and Invalids.
By WILLIAM S. WILSON, L.R.C.P. Lond., M.R.C.S.E., with a Chart showing the Ocean Routes and illustrating the Physical Geography of the Sea. London: J. & A. Churchill, New Burlington Street: 1880.

THIS is a small octavo of 260 pages, including fourteen chapters

with comprehensive headings, two appendices, and a carefully prepared index, so that the contents are easily ascertained. The author has, we think, done his work conscientiously and well, thereby rendering a real service to the two classes of travellers for whom it is specially intended.

Of course we cannot enter into details, and it would be rash to express opinions as to health resorts when so many circumstances must be taken into consideration in determining the wisest course to be followed in particular cases. Pulmonary complaints constitute the majority of those usually expected to derive benefit from a prolonged sea voyage; but it is obvious that the new climate to which the voyage is to carry the patients will require much careful consideration. The present work will afford valuable assistance in determining such questions, and, at all events, will put the patient and his medical advisers on their guard in coming to a decision.

In perusing the book, however, we have come to the conclusion that a sea voyage of some duration, particularly in a comfortable, well-found sailing vessel, is fitted to benefit in a special manner a class of cases which are not generally associated with that kind of remedy. We mean those melancholy cases—becoming more numerous year by year—in which mental breakdown is either brought on or rendered imminent by the anxiety and incessant application to business so common in these times of hurry and high pressure. A continental tour is a common prescription under these circumstances; but we imagine that a long sea voyage, beyond the reach of newspapers and telegrams, would, *ceteris paribus*, be more efficacious. A new set of mental faculties would find employment, while those previously overwrought would have salutary repose.

Nineteenth Report of the Scottish National Institution for the Education of Imbecile Children at Larbert, Stirlingshire.

THIS institution, which is now well known throughout Europe and America by the original observations and scientific study by Dr Ireland of cases therein treated, is still widening its circle of benevolence and usefulness by a well-marked yearly increase in the number of inmates. The imbecile children educated, or, where education is impossible, provided with a comfortable home and ensured kind treatment in this institution, have now mounted up to 116. This in itself is a great proof of the success of this philanthropic undertaking.

In the report now before me Dr Ireland gives a condensed account of the objects aimed at in the Larbert Institution. He says, "The Institution may be said to serve three purposes—It is a training school for imbecile children who have sufficient intelligence to receive education; it is an hospital for treating children who have

constitutional or nervous diseases, complicated with idiocy or imbecility; and, thirdly, it serves as an asylum for cases of hopeless idiocy who cannot be otherwise cared for. The education of imbecile children is a slow process, pursued under great difficulties, and with little encouragement save the satisfaction of faithfully performing a difficult duty. The parents of the children, from whom one might expect the heartiest recognition of the efforts of our staff, generally find the result not to reach their anticipations, and always to fall short of their wishes. The work goes on, nevertheless, day after day, and there are few pupils that do not show improvement; in some the improvement is considerable; in others not very great, especially if measured against the enormous trouble expended. In a few cases there is no change for the better." The great good to humanity an institution of this kind affords is easily demonstrable. On the one hand, the poor idiot child is seen in its native haunts, dirty, ill-fed, and uncared for, dragging out a miserable existence, exposed to the bullying, teasing, and ill-usage of the neighbouring children; on the other hand, the child is seen clean, well-fed, and well-cared for, living a regular and orderly life, and educated as far as practicable in the schools, workshops, gardens, etc., of the institution, under the charge of competent and well-trained teachers.

It must not be forgotten that this institution still depends in a great measure on private charity for existence. With its increase in size a corresponding increase in income is demanded. From figures given in various reports I find the income has not increased in the same ratio as the increase in size, although the revenue from boarders of the better classes is steadily increasing. Members of the medical profession in Scotland will therefore do well to direct the attention of the charitably disposed among their patients to this rational and carefully-worked charity.

In connexion with this part of the subject, it seems a pity that the British Government should be behind other countries, such as America, in its legislation for the maintenance of imbeciles. I cannot, for my part, see why lunatics should be supported by Government and idiots not. Till this step is taken, and a sufficient number of publicly supported asylums for the maintenance of idiots are established, Britain must be said to be behind the age in its legislation on this subject. The following quotation from Dr Ireland's report shows that even our own colonies are before us:—"During the autumn I paid a visit to Canada and the United States, and it gave me great pleasure to see that the claim of the imbecile to partake in the benefits of public education is fully recognised in the New World. In the United States especially, where much more attention has been for a long time paid to education than in some of the most enlightened countries in Europe, the training schools for imbeciles are liberally supported by the different State legislatures. Thus their resources are always adequate to the work which they have

to do; the pupils are received at once whenever it is proved that special training is needful, and kept as long as such training is found to be beneficial. Even in the new States of the West, training schools have been already set a-going, and some of them are said to be finer than those near the Atlantic sea-board."

Journal of the Scottish Meteorological Society.

WE call attention to the latest quarterly publication of this well-conducted periodical. Among interesting papers by Dr David Christison, Mr Thomas Stevenson, and others, we notice two of special importance.

The secretary, Mr Alexander Buchan, gives an account of the great storm of 28th December 1879, which will be long remembered for the Tay Bridge disaster. We were not previously aware of the simultaneous havoc produced by it among trees, and even substantial masonry, throughout Scotland. The whole evidence, however, goes to show that it did not equal in intensity the Edinburgh hurricane of 24th January 1868. The scientific observations in connexion with both deserve careful perusal.

Dr Arthur Mitchell has a valuable paper, with reliable statistical tables, on the fog which prevailed from November 1879 to the first week of February 1880. He shows that (1) the whole death-rate was enormously increased; (2) that no approach to such increase was observed in any of the other large towns where no fog prevailed; (3) asthma was the disease which appeared to be most directly influenced in its fatality by the fog; (4) deaths from bronchitis, pneumonia, pleurisy, and other lung diseases were greatly influenced by the fog, but did not show the close and direct obedience to the varying density and persistence of the fog that asthma did; (5) the same remark was made regarding hooping-cough; (6) rheumatism and croup did not seem affected by the fog; (7) other causes of death showed no very striking relation to the varying density and persistence of the periods of the fog. We may add that there were thirty-nine days of fog during the period already specified.

Part Third.

PERISCOPE.

MONTHLY RETROSPECT OF OBSTETRICS AND GYNÆCOLOGY.

By ANGUS MACDONALD, M.D.

ON THE TREATMENT OF RUPTURE OF THE UTERUS.—Dr Frommel, Assistant-Physician to the Gynecological Clinique in Berlin, pub-

lishes two interesting cases of this accident in No. 18 *Centralblatt für Gynäkologie*, 1880. Case I. refers to a patient 40 years old, who had given birth twelve times previously, and who suffered from slight contraction of the pelvis—diagonal conjugate being 4 inches. The labour had been a prolonged one, and had suddenly become arrested, when the assistance of Dr Hoffmeier was obtained. He removed without great difficulty, by version, a dead full-grown child, and discovered an almost complete transverse rupture of the uterus between the lower segment and the cervix, only a bridge of tissue about $2\frac{1}{2}$ inches broad to the left and anteriorly remaining to connect the two. The peritoneal investment of the uterus was quite entire; but as the child had passed out through the rent in the uterine tissue, it was almost completely separated from the uterus, so that now a large cavity shut off from the peritoneal cavity existed. Dr Hoffmeier caused the patient to be immediately brought to the hospital, in which a thorough irrigation of the cavity with a warm two per cent. solution of carbolic acid was performed under chloroform, and a thick drainage-tube introduced through the vagina into the cavity. This was secured in position. An ice bladder was put upon the abdomen. The condition of the patient was after this satisfactory. No vomiting; pulse strong, regular, 84. The highest temperature which she reached was 100° on the evening of the sixth day. This was also the only time that an antiseptic injection was made through the drainage-tube. For the first few days the patient got only a little fluid nourishment. From the eighth day gradually more nourishing food was administered. During the first days a tolerably copious bloody fluid was discharged from the drainage-tube, which after a few days became less bloody, and, finally, purely pus. On the twenty-sixth day, no further discharge appearing, the drainage-tube was taken out. On the twenty-eighth day the patient was allowed to rise, and on the thirtieth day she was discharged. On internal examination an opening several centimètres deep was found to exist anteriorly, through which the finger could penetrate up to the peritoneum. On the right there was a considerable amount of exudation; the uterus somewhat dislocated towards the left, and retroflected. General condition good. The second case was that of a patient 30 years old, who had suffered from rickets in early life, and had three times been delivered naturally. In her fourth confinement, in consequence of the labour proving tedious, the midwife administered four powders of ergot. A medical man who was called prescribed morphia, and, having obtained the aid of another medical friend, diagnosed rupture of the uterus, for which laparotomy was decided upon. The execution of this operation was prevented by the opposition of a drunken husband, whereupon the patient was taken to the hospital. On examination under chloroform the parts of the child were to be felt directly under the abdominal wall. Internal examination discovered the child situated with

its head presenting, quite movable, at the pelvic brim, the whole child and placenta having passed into the abdominal cavity. The body of the uterus was almost entirely torn from the lower segment and cervix, except for a small connecting part on the posterior wall, and lay powerfully contracted, pushed upwards and backwards. Professor Schroeder delivered at once, by version and extraction, a fresh, full-grown female child, whereupon the abdominal cavity was washed out with two per cent. carbolic acid, and a thick drainage-tube introduced as high as possible into the peritoneal cavity, which was secured likewise by suture to the posterior commissure. On the abdomen a bandage was so applied that the uterus was pressed firmly backwards and downwards, and also the cavity compressed. Thereby a great accumulation of blood in the abdominal cavity was prevented. In addition, an ice-bladder was put on the abdomen. The condition of patient thereafter was wonderfully good. The pulse was somewhat frequent and irregular, but powerful; the temperature not elevated. This case also ran a favourable course. During the earlier days a copious bloody fluid was discharged through the tube, which became purulent after ten or twelve days. The temperature only once rose to 101° . As often as it exceeded 100° , which it did on several evenings, a two per cent. carbolic solution was injected into the cavity through the drainage-tube, which readily flowed out past the tube. For the first few days attempts were made, by the administration of opium, to prevent peristaltic action of the bowels, so as to allow of the formation of adhesions around the torn part. The pulse, which from the first was frequent, ultimately settled down to about 100, but was strong and regular. On the seventeenth day after delivery the drainage-tube was removed, when the opening was found only large enough to hold the tube, and secreted a small quantity of laudable pus. On the nineteenth day the patient got up, felt well, and complained of nothing. Two days afterwards she was discharged. To the account of these interesting cases the author adds a few words in recommendation of the practice.

A CONTRIBUTION TO OUR KNOWLEDGE OF SPINAL PARALYSIS IN THE NEWLY-BORN is made by Litzmann in the *Archiv. für Gynäkologie*, Bd. 16, s. 87. The author attaches his observations on the subject to an account of a case observed by him in Kiel. The presentation was breech. The pelvis was not particularly small, the diagonal conjugate measuring $4\frac{3}{4}$ inches, leading to an assumed conjugate of $3\frac{1}{2}$, the type being justo-minor. The extraction of the body required to be hurried on account of absence of pain and arrest of the circulation in the cord while the body of the child was passing through the pelvis. The child, on being delivered, was deeply asphyxiated. The delivery required no great amount of force to be exerted upon the spine. The asphyxiated child was

quickly brought round, and cried loudly. It cried a great deal in the course of the forenoon, and was very restless. Inspirations were irregular and crampy. In the afternoon both legs were completely paralyzed, sensation and reflex sensibility were arrested; the belly muscles were also more loose than usual, and the belly distended. Other symptoms of paralysis were detected. The child shortly improved somewhat, however; but in spite of care and prolonged application of electricity, direct and indirect, there remained considerable permanent paralysis. After a review of the literature of the subject, in which special attention is directed to the work of Little, the author maintains that during severe deliveries which are accompanied with deep asphyxiation of the child, extravasations frequently take place into the meninges of the brain and into the brain tissue, as also into the membranes of the cord, during the delivery, which present themselves in the early years of life as paralyzes more or less severe in character. He insists upon greater attention to cases of the kind, and considers that those extravasations may take place quite independently of any force used at delivery.

ON THE TREATMENT WITH ALKALIES OF A LITTLE KNOWN CAUSE OF STERILITY—an acid condition of the utero-vaginal mucous—by Charrier, Paris. The author states that many women who are quite healthy, whose genital organs are perfectly normal, and who are married to healthy husbands, remain sterile. The cause of this is frequently an acid condition of the uterine and vaginal mucous, which may be proved directly by the use of litmus paper. This condition is an absolute prevention of conception, because the spermatorrhœa die immediately. Accordingly, if the woman's mucous secretions give an acid reaction, she continues sterile. By treatment with alkalies, alkaline drinks and baths (Vichy water), and alkaline injections (1000 parts of water, sulph. of soda 90 parts, white of egg 1 part), the disease may be removed and conception follow. This, according to the author, explains the frequently incomprehensible results and numerous strange successes that follow the use of alkaline springs in sterile women. Two successful cases are given in illustration of the author's views. Professor Pajot also expresses himself as in agreement with the author's views.—*Bulletin General de Therapeutique*, Nos. 11 and 12, 1880; and *Centralblatt für Gynäkologie*, 18, 1880.

KOLPO-CYSTOTOMY BY ELECTRO-CAUTERY—Dr John Byrne, Surgeon-in-Chief to St Mary's Hospital, for Diseases of Women, Brooklyn, has devised an ingenious method of forming artificial vesico-vaginal fistule for the relief of chronic cystitis in the female. His instrument, which is named the vesico-vaginal guide forceps, consists of two blades—one a round vesical staff provided with a deep groove on its inner surface near the extremity, the

other a flat vaginal blade, having a fenestrum exactly corresponding with the groove on the vesical blade. The length of the groove is about one inch. The blades are hinged after the manner of an ordinary polypus forceps. The vaginal blade is faced with ivory and deeply serrated. A ratchet spring secures the forceps when closed. A patient having been placed on her side, and the parts well brought into view by a Sims' retractor, the vesical staff of the guide forceps is to be passed through the urethra into the bladder, and simultaneously the fenestrated blade carried along the vaginal wall, in a direct line with the urethra, up to within $\frac{1}{4}$ inch of the cervix. The instrument, being now closed, and securely locked by the ratchet spring, is assigned to an assistant, or supported by the left hand of the operator. In this manner the normal relative position of the vaginal, vesical, and intermediate tissues is maintained, and the risk of a valvate incision avoided, while the long narrow fenestrum furnishes an accurate guide for the blade of a cauterizing knife. Dr Byrne employs the electro-cautery for this operation. Having applied the point of the blade in the fenestrum, and closed the battery circuit, by a few up and down strokes of the heated knife the elongated opening in the tissues is effected, and the point of the knife has reached the groove in the vesical staff. In this manner is avoided accidental or excessive cauterization, and injury from radiation of heat. The subsequent treatment consists in washing out the bladder twice a day with carbolyzed water (1 p. c.) at temperature of 104°-110° Fahr. The fistula must be examined once a month at least to see that its patency is maintained.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

ON THE PHYSIOLOGICAL ACTION OF AN ALKALOID EXTRACTED FROM THE GARDEN TULIP.—Mr Gerrard extracted for me an alkaloid from the bulbs, leaves, and flowers of the garden tulip, each pound of plant yielding a grain of nitrate of tulipine. I first applied a 1 in 20 solution of the nitrate of tulipine to the eye of a cat, repeating the application frequently at a few minutes' interval. It produced some smarting and very free salivation. The pupil remained unaffected. Several days after this trial of the tulipine I applied a solution of nitrate of silver to the same eye, to ascertain whether the salivation was due simply to irritation of the eye, or to the topical action of the alkaloid on the mucous membrane of the mouth. Though the nitrate of silver irritated the eye far more than the tulipine solution, it produced very little salivation; hence the alkaloid probably acted topically on the mucous membrane of the mouth. On applying a little of the solution to his tongue, Mr Gerrard found that it

caused tingling of that member and of the throat—a tingling like that of aconite, lasting several hours. I next tested the action of tulipine on frogs. In frogs killed with tulipine I find the ventricle small, pale, and rigid, like the heart poisoned with veratria. Tulipine stops the ventricle sooner than the auricles. *Conclusions.*—Tulipine differs almost entirely from the action of alkaloids derived from the plants belonging to the Natural Order *Amaryllidaceæ*, so far as I have examined. Tulipine is a muscle poison, affecting the muscles like veratria. It is, however, weaker than veratria. It paralyzes either the cord or the afferent nerves, or both; but probably it affects the afferent nerves. Its action on the motor nerves, if any, is but slight. It affects the heart of frogs like veratria. It does not affect the pupil. (By Sydney Ringer, M.D., Professor of Medicine at University College, London.)—*The Practitioner*, October 1880.

HYOSCYAMIA.—This alkaloid of hyoscyamus, which can now readily be obtained in a state of purity, is a valuable addition made recently to the armamentarium of the physician, containing as it does, in small and agreeable compass, the hypnotic, anodyne, and antispasmodic properties of the bulky and disagreeable preparations of hyoscyamus. The pure alkaloid occurs in needle-shaped crystals, and is odourless. The taste is bitter. It is quite insoluble in cold water, easily soluble in hot water, and alcohol, ether, and chloroform. It has, in my experience, great value in the treatment of mania, delirium tremens, and paralysis agitans. In the treatment of mania it is particularly useful, inasmuch as the dose is small, and its taste can readily be concealed with coffee, tea, or milk, and therefore is readily administered to those patients who positively refuse all ordinary medication. I have given the drug recently in three cases of puerperal mania, with the effect of promptly modifying the mentality to such an extent as to make possible the use of ordinary treatment. The preparation used was Merck's crystallized alkaloid, and the dose found effective much smaller than that recommended by recent writers. The 1-30th of a grain has been the ordinary dose employed; this dose has invariably produced mydriasis and dryness of mouth and throat. The great value of the drug consists in its furnishing, in a small compass, a powerful agent for overcoming the cerebral irritability and hyperæmia of mania, and is an agent that can, usually, be administered without the knowledge of the patient. Moreover, my experience with the drug—that is, with Merck's crystallized alkaloid—would lead me to apprehend fatal results from the administration of one-half or one-quarter grain doses. (By Daniel R. Brewer, M.D.)—*Chicago Medical Journal and Examiner*, Sept. 1880.

TREATMENT OF GOITRE.—Dr Stevens of Quebec reports seven

cases of goitre cured by the chloride of ammonium. Six were girls under 20 years of age, and one a married woman aged 40. The dose given was ten grains three times a day, the tumours entirely disappearing at the end of three months.—*American Practitioner*, October 1880.

IODOFORM IN THE TREATMENT OF GOITRE.—Dr Boéchat believes that iodoform dissolved in sufficient quantity in some indifferent fluid may be successfully employed in the treatment of goitre. In injecting into the tumour, better results are attained than with the tincture of iodine, and there is no fear of the subsequent complications so frequently met with after the employment of the latter method, and which are due to the formation of cicatrices, owing to the action of the alcohol upon the tissue of the thyroid body. The chief objection to the use of iodoform has always been its acrid and penetrating smell. This objection, when employing it for external use, Dr Boéchat has sought to overcome in the following manner:—The iodoform has been freely powdered, and has then been intimately mixed with glycerine, the mixture being applied to the goitre. As soon as it has begun to dry, the part is painted over with collodion, which dissolves a small quantity of the iodoform by means of the ether which it contains. The plan is not very successful, however, as it only masks a part of the odour. The application is to be made every two or three days. In cases of goitre of long standing, and in cystic and parenchymatous forms, no results have been obtained by this method of treatment; but in the cases of young patients, and in goitres of recent growth, which consisted of soft, non-fibrous swellings, very marked results were obtained, the goitre disappearing more rapidly than with iodine or potassium iodide. Iodoform administered in internal doses of pills, each containing 0.01 grain, to the extent of ten pills per day, has not given any very satisfactory results. (*Blatt. f. Schweiz. Aerzte.*)—*American Practitioner*, October 1880.

EUCALYPTUS OIL FOR DRESSINGS.—Dr Schutz of Bonn considers that eucalyptus oil offers many advantages over carbolic acid without its inconveniences. It is a powerful antiseptic, is freely soluble in alcohol and oil, and mixes well with paraffin; its odour also is agreeable. Dressings prepared with this oil are very antiseptic. It may be employed also for spray and washing.—*Medical Press and Circular*, September 19, 1880.

SALICYLATED CAMPHOR IN PHAGEDENIC ULCERATION.—In the treatment of this form of ulceration, Dr Lajone, according to *Le France Médicale*, employs an ointment composed as follows:—Camphor, 10 grains; salicylic acid, 10 grains. These are mixed, and then there is added alcohol (at 90° C.), 10 drops; vaseline, 10 grains; paraffin, 25 grains. This makes a consistent ointment

which is put upon the wounds.—*Medical and Surgical Reporter*, Sept. 11, 1880.

THE TREATMENT OF DIPHTHERIA BY CARBOLIZED CAMPHOR.—M. Peraté has, according to *Bulletin de Théraputique*, July 15, 1880, for the last two years used carbolized camphor for the treatment of diphtheria. He paints the surface with a pencil dipped in the following mixture:—Carbolic acid, 9 grains; camphor, 25 grains; alcohol, 1 grain, diluted with equal parts of the oil of sweet almonds. The paintings are made every two hours in the day and every three hours in the evening; then after some days they are divided by periods of three, four, or five hours, according to the improvement of the patient. These paintings are made over the whole extent of the false membranes, and with troublesome children the pencil is plunged as deeply as possible to the bottom of the throat, being, of course, previously drained. The mixture has an extremely disagreeable taste, to which, however, the patient soon becomes accustomed. M. Peraté has been very successful with this plan of treatment.—*Medical and Surgical Reporter*, Sept. 11, 1880.

POTASSIUM IODIDE AND CALOMEL IN OCULAR THERAPEUTICS. (*Schafke. Arch. f. Ophth.*, xxv. 2, p. 251.; *Lyon Medical*, May 9, 1880.)—(1) The use of insufflations of calomel, while potassium iodide is given internally, gives rise to violent inflammation of the eye; (2 and 3) Potassium iodide can be very rapidly detected in the lachrymal secretion, even when given in six-grain doses twice daily; (4 and 5) Calomel, only slightly soluble in pure water, is much more so in a saline solution like the tears; (6 and 7) The two salts present in the lachrymal secretion give rise to proto- and bin-iodides of mercury, which, acting as usual, cause an intense inflammation; (8) Hence the rule to avoid the local use of calomel in eye troubles as long as iodine is present in the tears.—*The Detroit Lancet*, September 1880.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

LUPUS OF CONJUNCTIVA.—Peck records an instance of this extremely rare disease. The patient was a girl, aged nine, born in New York of Polish parents, and was in robust health. There was an oval ulcer, with well-defined, rather irregular margins, granular floor, coated with clean white secretion, not sensitive, but bleeding easily when touched, on the upper lid of the left eye. It had existed two months when seen. It soon healed after two cauterizations with nitrate of silver and the application of a solution of liq. chlori. Three other similar ulcers formed successively,

one occupying the inner canthus. Each healed before a fresh one appeared. The diagnosis of primary lupus of the conjunctiva was confirmed by Dr Bulkley. Of 167,318 cases of eye disease there were only 17 diagnosed as lupus.—*Archives of Medicine*, June 1880.

MILIARIA FROM CONTACT WITH ASPARAGUS OFFICINALIS.—Güntz of Dresden records a case of this. The person was a cook, aged 40, pale, fat, and not robust, who during the asparagus season was occupied from morning till night in cutting up and preparing the vegetable. The air of the room was so impregnated with the aroma as to cause sneezing to those unaccustomed to it. When seen the skin of the arms where uncovered was red, swollen, and covered with innumerable vesicles of miliaria, each surrounded with a dusky areola. The palms were soaked with asparagus juice, the skin softened and like a washerwoman's, but without vesicles. The face and neck were slightly reddened and swollen, with few vesicles. The eyelids were deep-red and much swollen, and there was severe conjunctivitis. The ailment soon disappeared when her occupation was intermitted for a few days. On resuming it, slight redness but no vesication showed itself. Her daughter, aged ten, suffered once in like manner. (The condition of the urine is not noted, which is an omission).—*Viertelj. für Dermat. und Syph.* I. Heft., 1880.

PILOCARPINE IN SKIN DISEASES.—Pick of Prague communicates an interesting paper on this subject. Various salts of pilocarpine were employed, especially the muriate, about $\frac{1}{2}$ grain being administered by the mouth or subcutaneously. When protracted sweating was desired, the remedy was taken twice a day, the patient being confined to bed. In other cases confinement in bed was not insisted on; and when warm weather exercise out of doors was permitted; the best time for giving it seemed to be one or two hours after the morning and evening meal. When the remedy had been continued three or four weeks, the effect became less marked, and the dose had either to be increased or the medicine intermitted for some days, when the same dose was again quite efficacious. An important difference in the order of appearance of the physiological effects was seen in some instances. Of 30 individuals, in 21 the internal administration caused first increased flow of saliva and afterwards sweating, while subcutaneous injection induced sweating first, then salivation. In the remaining 9 both methods caused salivation first. Continued use of pilocarpine exerted an important influence on the oiliness of the hair and on its growth. The skin became softer, more pliant and satiny; comedos and papules of lichen pilaris could be more easily pressed out or got rid of, the scurfiness of the scalp became less or disappeared, the hair was less

brittle, the new growth of lanugo hairs changed more rapidly into dense, properly pigmented ones. Under employment of the drug for months the general condition of the patient was not impaired; indeed, the appetite improved, and he was better nourished. In prurigo (of Hebra) pilocarpine alone had little effect, but this was otherwise when its use was combined with that of woollen clothing, so as to induce free sweating, which was at first manifest only in the sound parts, after a time also in the portions of the body affected with prurigo. Clinical experience agreed with that of the patients themselves when they declared that when, after a few days' use, a material amelioration of their condition declared itself, the itching also continually grew less, in the end entirely to disappear. The other symptoms also underwent improvement, such as the glandular enlargements, the dry and thickened condition of the skin. The average period required to attain this result was sixty-five days. The effect was more rapid when the employment of pilocarpine was combined with that of other remedies found useful in prurigo, as tar, vlemingx solution, glycerine of starch, etc. As to the curative influence of pilocarpine, the disease recurred at longer intervals after its use than after the employment of other measures, and the outbreaks were less severe when they did occur. While not absolutely curative, therefore, it is possible to attain by its use a more favourable result than when purely local treatment is made use of. Whether, if long continued, the disease would be finally worn out remains unsettled. Pilocarpine exerted no influence on psoriasis, though observations were made in 25 cases. In eczema it produced a deleterious influence when employed during the moist stage or too soon after its cessation. It caused a return of the weeping, and even a spread of the eczema to new parts. In chronic cases, however, where there was little more than scaling, itching, and infiltration remaining, the use of pilocarpine caused these to disappear more rapidly than they would have otherwise done. Subcutaneous injections of pilocarpine cured two cases of pruritus senilis, causing disappearance or lessening of the itching for some hours, thus rendering sleep possible and imparting both physical and mental strength. A case of chronic urticaria which had resisted other remedies yielded to pilocarpine. From what has been said as to its effect on the condition of the skin and growth of the hair, as might be expected, it seemed to hasten recovery from the baldness of alopecia areata, while in ten cases of alopecia pityrodes (seborrhœa) the results were even more favourable.—*Wiertelj. für Dermatologie und Syphilis*, I. Heft, 1880.

RHINOSCLEROMA.—In the Royal Society of Physicians at Vienna, a woman aged 41 years, who had suffered for seven years from rhinoscleroma, was shown by Dr Jarisch, and the disease discussed by Billroth and Kaposi. The disease affected the whole cartilag-

inous portion of the nose and the whole extent of the upper lip. The soft palate had given place to mere cicatricial tissue. The posterior nasal aperture was the size of a quill, stenosis of the larynx, vocal cords nearly immovable, grayish-red, and granular. Billroth had not yet made up his mind whether this chronic inflammatory process was due to syphilis. He had treated a case for six years, performing stomatoplasty every two years for the constantly recurring stenosis of the mouth. The extirpated mass shows no longer any small-cell infiltration as at first, but consists of rigid, tough scar-tissue. In this tissue true bone formation has taken place, though the periosteum of the jaw had not been affected before the disease, nor by the operations. This spoke against the view that rhinoscleroma might be a sarcomatous formation. Kaposi remarked that in his first work on rhinoscleroma he had placed it, as a small-cell formation, next to sarcoma, as was the truth histologically and clinically, rhinoscleroma spreading indefinitely and taking up all neighbouring tissues into itself without inflammation, hyperæmia, swelling, œdema, rise of temperature, or subsequent absorption. In one case he had seen large tumours formed, in another absorption of the upper jaw, and even to the surface of the brain. The products of syphilis all tend to retrograde and yield to antisiphilitic remedies locally applied. In rhinoscleroma the reverse is true. He had seen an exquisite rhinoscleroma of the soft palate while the nasal cartilages were unaffected.—*Wiener Med. Presse*, Nov. 2, 1879; and *Archives of Dermatology*, April 1880.

PERISCOPE OF OPHTHALMOLOGY.

By GEORGE A. BERRY, M.B.

NYSTAGMUS.—The condition of nystagmus is principally interesting when symptomatic of a disturbance of the nerve centres which preside over the co-ordination of the associated movements of the eyes. Dr Oglesby of Leeds (*Brain*, July 1880) has had special opportunities for studying the form of this affection met with in miners; he also gives an interesting account of the more usual forms. These he classifies into idiopathic and symptomatic. The first group may be either congenital, as in albinos, or associated with lamellar cataract or choroiditis, or acquired from corneal opacities or sympathetic irritation. Symptomatic nystagmus is, on the other hand, brought into relation with epilepsy, disseminated sclerosis, cerebral congestion, etc., and some interesting cases recorded. Miner's nystagmus comes on suddenly without being preceded by symptoms of ill-health, but has in all the cases seen been associated with *putit mal*. It persists, after once commencing, whenever the miner is at work in the bent position, but ceases, as a rule, when he is able to assume an erect posture. Miners themselves believe that it is due

to their having so frequently to work immersed up to the waist in water. Oglesby is inclined to believe that such is really the primary cause of the disease. He explains the fact of the nystagmus only occurring when the head and neck are bent by supposing that the medulla is thus in a state of venous engorgement due to pressure on the large vessels of the neck, and that this produces "a continuous cell discharge from unstable gray matter, rendering visual co-ordination impossible." Generally a venous stasis is found in the retinal vessels with the ophthalmoscope.

In a paper in the *Annales d'Oculistique* for August 1880, Warlomont discusses the subject of nystagmus at some length. The different movements are classified into oscillatory, rotatory, and mixed. The movements of the head, which are sometimes found to take place in a direction opposite to that of the eyes, are found to be always much slower than the latter, and therefore not compensatory. The rapid movements of the eyes do not generally cause a disturbance of vision, only when they are intermittent or symptomatic of some nervous disorder. The movements are generally associated and are accompanied by diplopia. They become more frequent under the influence of moral excitement, when the intensity of light is diminished, in prolonged accommodation for near objects or objects moving rapidly before the eyes. Symptomatic nystagmus is divided into traumatic and non-traumatic. The latter may be associated with either cerebral or spinal lesions. When it exhibits itself suddenly in apoplexy, if accompanied by hemiplegia and rotation of the eyes towards the side of the lesion, it is probably the temporo-sphenoidal region which is affected. Lesions of the cerebellum do not appear to be accompanied by nystagmus. It is rare in locomotor ataxia. It does not occur in mental affection or in hysteria, chorea, or epilepsy. In the cases in which it is present a material complication in the cerebrum must be suspected, and the prognosis is therefore bad. The question of nystagmus in connexion with disease of the semicircular canals is also discussed, and the cases observed by Pflüger and Sewalbach referred to. Miner's nystagmus occurs mostly in men who work in the galleries, and only takes place when the plane of fixation is raised, *i.e.*, when the superior rectus and inferior oblique are brought into action. According to Alfred Graefe, this explains why the head is held bent backwards, as by so doing as many objects as possible are seen in the lower part of the field of fixation. The range of accommodation is always diminished in these cases. Graefe also thinks that the nystagmus is due to a constant effort to distinguish objects in the semi-darkness in which the miners have to work. There is always a certain amount of anæmia, and the treatment adopted is mainly constitutional.

OMATROPINE.—About a year ago Ladenburg of Kiel discovered a new mydriatic prepared by the action of hydrochloric acid on

the amygdalate of tropine, to which he gave the name of homatropinum hydrobromatum. The following experiments (*Centralblatt f. Augenh.*, June 1880) were made by Fuchs with a view to determining its value as a temporary pupil-dilator compared with weak solution of atropine. A one per cent. solution of homatropine was dropped into the one eye in a number of cases, whilst for the other a solution of atropine 1 : 5000 or 1 : 10,000 was used, and the size of the pupil and state of accommodation determined at first every five minutes and then every second hour. The one per cent. solution of homatropine brought about dilatation of the pupil after twenty minutes at the earliest, and this attained its maximum after from sixty to seventy minutes. The pupil dilated to 7 mm. or more, but never attained the maximum dilatation got with a strong solution of atropine. The action began to diminish after two to three hours, and had generally disappeared altogether after five hours. The weak solution of atropine used took generally ten minutes longer before its action became apparent, but was still marked after twelve hours. The action on the accommodation was very feeble, and much the same in both cases. Fuchs considers that as homatropine is thus found to be quicker and less lasting in its action on the pupil, it may be found useful when it is desired to obtain dilatation for ophthalmoscopic purposes.

THE CONDITION OF REFRACTION AT BIRTH.—Dr Ely (*Knapp's Archie*, vol. ix. p. 4) has examined the eyes of 111 children between the ages of a few hours and eight weeks, for the purpose of determining the most common state of refraction at birth. His results, which differ greatly from those of Jæger, are probably more accurate, inasmuch as the examination was made with paralyzed accommodation both of his own and of the child's eye. Anæsthetics were also used, so that the eyes could be kept perfectly at rest. The relative percentage found for the different states of refraction was, emmetropia 17 per cent., myopia 11 per cent., and hypermetropia 72 per cent. In no case was there found to be a difference in the refraction of the two eyes. The appearance of the fundus in the cases of myopia did not differ from that which was found in the other cases. Ely does not deny the possibility of the percentage of hypermetropia found being too high, owing to the flattening of the lens produced by the full action of the atropine.

ON THE CAUSE OF THE TENDENCY TO PROGRESSION IN MYOPIA.—Javal (*Annales d'Oculistique*, Aug. 1880) considers it important for myopic eyes to avoid as much as possible any effort at accommodation. In slight degrees of myopia, *i.e.*, under three to five dioptries, he gives convex glasses for reading; when the myopia is greater, concave, which bring the far point to thirty centimètres or thereabout. This treatment, which he has adopted for many years, has, he considers, been highly effectual in preventing the myopia

increasing. He does not accept the view of Donders and Giraud-Teulon that convergence tends to increase myopia owing to the pressure of the internal recti. Another explanation seems necessary. Taking into consideration the extreme frequency of myopia in persons who read a great deal, and its rarity amongst needlewomen, who are obliged to keep up quite as constant convergence, the principal peculiarity in reading would appear to be the variations in the amount of accommodation which are necessary. Thus the difference in accommodation for the middle and ends of a line increase as the page is held closer to the eyes, so that, to take an extreme example, for a myopia of fifteen dioptries a line ten centimètres in length would demand a variation of accommodation equal to seven dioptries. No mention is made of the invariable compensatory movements of the head in such cases.

GLAUCOMA.—Under the title of a further investigation of the pathology of glaucoma, Mr Priestley Smith (*Ophthalmic Hos. Rep.*, Aug.) brings forward what he considers additional evidence in favour of the views published by him in his previous essay on the subject. The first point on which it appeared necessary to obtain further information was as to whether or not the diameter of the lens increases with age after adult life. In five cases examined between the ages of 21 and 90 the diameter was found to increase steadily with age from 8.0 mm. to 9.75 mm., and the thickness from 5.5 mm. to 6.5 mm. He is of opinion, further, that the drawings with which the paper is illustrated show that as the diameter of the lens increases the circumlental space diminishes. This, it will be remembered, was an essential point in connexion with the theory advanced. Occasionally this space is found widely open in a glaucomatous eye after excision; but he maintains that there is usually evidence to show that it has previously been abnormally narrow. There is not as yet sufficient evidence to show whether the abnormality of the glaucomatous eye is primarily in the lens or in the ciliary process. The diameter of the lens was measured in three cases of primary glaucoma, and "in each of these, and especially in the two first, the lens has a diameter distinctly greater than that of the largest in the healthy series; and it is especially noteworthy that neither of these two glaucomatous lenses would lie between the ciliary processes in any one of the healthy series." He concludes by restating the points of his theory, which he considers fully borne out by his subsequent observations.

THE CONDITION OF THE OPTIC NERVE, CILIARY BODY, AND IRIS IN INCREASED TENSION, forms the subject of an interesting paper by Brailley and Edmunds in the last number of the *Ophthalmic Hospital Reports*. A change in the optic nerve, generally an excessive development of tissue resembling, though

much denser than, the normal stroma, was found to accompany increased tension, however produced. This hypertrophy of the stroma is especially marked round the vessels, and is tabulated in the curator's report as vascular sclerosis. From a comparison of the histories of the numerous cases which are given in the report, "it would appear that neuritis with a distended vascular sheath constitutes an earlier stage than those with translucent exudation, that this fibrillates into the vascular sclerosis stage, till finally sclerosis of the nerve with a corresponding condition of the walls of the artery is attained." These changes succeed each other more rapidly in proportion to the age of the patient. The same appearances of the nerve are seen in buphthalmus. The ciliary body exhibits a similar pathological condition, not quite as constantly, however, as the nerve. "In primary glaucoma the conditions most usually seen at excision are atrophy of the muscular (especially the circular) bundles, abundant dense fibrous tissue between their scanty remains, a fibrous condition of the ciliary fibres, and in these either dilated and varicose capillaries or a total absence of bloodvessels." The atrophy of the ciliary body may sometimes be so great as to reduce it to less than a third of its normal size. "The diminution in size and alteration in shape of the ciliary body, due to its sclerosis and atrophy, approximate its internal surface, and more especially its apex, to the origin of the ciliary muscle, and in this movement the ciliary body necessarily carries with it the peripheral attachment of the iris." The closure of the angle of the anterior chamber is found to be due to a contraction of the ligamentum pectinatum, which draws the connective tissues of the iris towards the posterior surface of the cornea. The position of the ligamentum pectinatum may, it is suggested, also be altered from the retraction of its posterior angle, subsequent to the development of connective tissue in the ciliary body referred to above.

A NEW REFRACTION OPHTHALMOSCOPE.—The last number of the *Ophthalmic Hospital Reports* contains a description of the latest modification which Mr Couper has given to his ophthalmoscope. Its chief distinctive features are, "1st, The contrivance by which one mirror is made to serve all purposes, both of direct and indirect examination; and 2d, the mechanism by means of which each lens is so placed during direct examination that the observer looks in its principal axis." An important defect in other instruments, viz., a great distance of the lens from the sight-hole, is obviated by making "the axis of the hinge which connects the mirror with the bracket a tangent to the edge of the disc on the one hand, and on the other to the back of the mirror at a point close to the edge of the sight-hole." Notwithstanding this hinge arrangement the instrument is adapted for direct examination of either eye, as the bracket carrying the mirror is made to describe a

semicircle round the disc. As from the position given to the mirror the disc must project beyond the observer's orbit, it is necessary to approach the eye to be examined from the side, not from the front. "All difficulties from this source are avoided by the ophthalmoscopist placing himself at the side instead of in front of the patient: by making the latter look outward while he himself does the same, and by arranging that the respective heads shall be slightly inclined towards each other."

ARGYRIA OCULI.—The eyes of a man aged 72, who for forty to fifty years had made use of nitrate of silver as an astringent application to the lids, were examined by Max Knies (*Centralblatt f. die Med. Wiss.*) with the following results:—The matrix of the cornea exhibited an intense brown discoloration, quite unlike the appearance, however, of a silver-stained preparation. Bowman and Descemet's membrane were most strongly stained, whilst the epithelium was everywhere unaffected. The sheaths of the vessels in the subconjunctival connective tissue were filled with pigment particles. No other portion of the eye exhibited the same pigmentation. Knies supposes the staining to be due to the absorption of a soluble albuminate of silver, after which the deposition takes place as metallic silver.

Part Fourth.

MEDICAL NEWS.

ERRATUM. — A statement occurs in Dr Marcet's paper, September number, p. 241, which he considers as not unlikely to lead to a misconception of his results. The figures in the table, under the heading "Litres of Air expired, reduced," should have the decimal point moved by one figure to the right, thus, 13.6 instead of 1.36. The actual conclusions of the paper are precisely the same.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.—This Society met on Friday the 1st inst., for the election of office-bearers, for the Session 1880-81. The following is the result:—*President*, Dr George Buchanan; *Vice-presidents*, Dr D. Taylor, Paisley, Dr J. B. Russell; *Council*, Dr Alex. Robertson, Dr A. L. Kelly, Dr Bruce Goff, Bothwell, Dr Geo. Willis, Baillieston, Dr Geo. Mather, Dr H. C. Cameron, Dr Robert Forrest, Dr Lapraik; *Secretaries*, Dr Joseph Coats, Dr W. L. Reid; *Treasurer*, Dr Hugh Thomson.

SOUTH DURHAM AND CLEVELAND MEDICAL SOCIETY.—The

annual meeting of this Society was held at the Stockton Hospital on the 12th inst., when the following were elected officers for the session 1880-81:—*President*—R. W. Foss, M.D., Stockton-on-Tees. *Vice-Presidents*—G. Middlemiss, Darlington; W. J. Williams, M.D., Middlesborough. *Committee*—J. R. Fothergill, M.D., Darlington; J. Farquharson, Stockton; T. R. Pearson, M.D., South Stockton; C. Young, M.D., Yarm; J. Rawlings, Hartlepool; J. W. Eastwood, M.D., Dinsdale Park; J. B. Peacock, Darlington; J. A. Malcolmson, M.D., Middlesborough; Robert Smith, M.D., Sedgefield. *Secretary*—J. R. Morison, M.B., Hartlepool.

GUY'S HOSPITAL.—The main principle which is at issue, and which really underlies the whole controversy, has been clearly stated in the *Lancet*. The Governors, in one of their resolutions, speak of the medical staff and of the nursing staff as if they were two distinct departments, which had to be kept in joint subordination to the central authority, and they impute blame to the doctors for not working harmoniously with the matron. The medical argument is, on the other hand, that nursing is merely one of the means of cure, like the administration of medicines or the performance of operations; and that, like these, it can only be rightly carried out under absolute and unconditional subjection, in every principle and detail, to the doctor who is responsible for the case. The treasurer, they say, has no more justification, apart from his legal right, for interfering with nursing, than he would have for dictating to a surgeon the nature and extent of the incisions which he should make in performing an operation. The staff contend, therefore, that no new regulations about nursing should have been framed or promulgated without their knowledge and approval; but they object to the new regulations not merely, or even mainly, on this ground, but because they consider them, from beginning to end, in their whole scope and tendency, prejudicial to the welfare of the patients, and directly calculated to aggravate illness, to retard convalescence, and to lead to death. The Governors, jealous of their authority, have determined to uphold the regulations. They are a body of gentlemen of high position, but possessing no special knowledge, either individually or collectively, which can qualify them to pronounce authoritatively upon many of the questions submitted to them. They give nothing to the hospital; they are independent of its reputation; they have none but a titular connexion with it. The staff is composed of men who have spent the best part of their active lives within the hospital walls, who are bound to it by every consideration of honour and of interest, and who daily render to it services of inestimable value. They are constantly called upon to discharge duties of the most delicate and difficult character, duties for which clear heads and quiet minds are essential; and it is conspicuously injudicious that, in the discharge

of these duties, the Governors should allow them to be worried and annoyed, either by treasurer, matron, or any one else. Persons fitted to fill these offices grow upon every bush; but a skilful hospital surgeon is one of the most elaborate products of modern civilisation. The reply of the staff to the wish that they would confer, or co-operate, or what not, with the matron, is very simple. They have never before been asked to do so; they never ought to have been asked to do so; and they wholly object, on principle, to any matron being placed in a position, or invested with an authority, under which any need for such concert or co-operation could arise. With a cause which in itself was unassailable, the medical staff have thrown away their advantages by injudicious letter-writing; and they have now no choice but to accept, for a time, the false position in which they have placed themselves. According to the position which they have taken up, they must submit to the risk of seeing injurious rules enforced, of seeing patients maltreated, of seeing the treasurer and the matron deciding, ignorantly, and therefore often wrongly, on purely medical questions. Should, in their view, these evils still unhappily continue, we cannot blame them if, while loyally accepting their position as now defined, they resolve upon seeking for the earliest available remedy. It will, indeed, be their obvious duty to strive, by every proper and legitimate means, and ultimately through the intervention of Parliament, to return to Thomas Guy's original constitution, and to secure a proper representation of medical science upon the Governing Body.—*Times*, Oct. 18, 1880.

OBITUARY.

DR JOHN CHARLES HIRSCHFELD OF BANFF.

WE have to deplore the death, under very distressing circumstances, of a young and promising physician, John Charles Hirschfeld of Banff. Dr Hirschfeld kept a small yacht, and it was his one chief amusement, after the fatigues of a hard day's work, to sail for an hour or two of an evening along the coast. On Tuesday, the 31st August, he invited some friends to accompany him, taking, as was his wont, George Finlay, a practical seaman, to manage the boat. There was a nice breeze off shore, holding out the prospect of a merry run such as the doctor loved, but so far from indicating danger, that on his way to the boat he met his little boy, and took him from the nurse's charge, crowing with delight on being taken to an oft-promised sail. The party ran up to Portsoy, a distance of eight miles, and after a short stay started on their homeward journey. All went merrily. The wind had freshened a bit, but not more

than the clever little "Snowdrop" was able to carry. Vividly can the writer of this little sketch, the last tribute of affection which he can pay to a well-loved friend, picture to himself the scene, for frequently had he accompanied the doctor on a similar cruise. Alas! what used to be a happy recreation is now but a painful reminiscence!

A fine manly fellow was Dr Hirschfeld as ever lived, the beau-ideal of one of nature's gentlemen, manly in form, manly in character, strong of hand and heart. A lover of the sea, he was an expert swimmer, and little recked he, as he rejoices in the breeze, and his little craft dancing merrily along, that the death he has so little reason to dread is soon to overtake him. About a mile and a half from home, a boat sent out by Mrs Hirschfeld with wraps and "a piece" for "Philip" meets them. Greetings are interchanged, the boatman offering to take back the child, as he expects to make the harbour sooner than the "Snowdrop," but the boy remains with his father. There was no reason to anticipate an accident, and how the accident happened will never be known, for the survivors cannot rightly explain it; but on a sudden the boat fills and goes down, the occupants being left struggling in the water. The only articles that floated from the boat were one of the oars and the rudder, and, as narrated in the *Banffshire Journal*, Cook got hold of the oar, and was joined at it by Christie and Finlay (Cook and Christie were two lads who accompanied the doctor on his fatal cruise). Cook, however, shortly left the oar and laid hold of the rudder, which was floating near by, and which he found to be a good means of support. Dr Hirschfeld instantly took hold of his son in his left arm, and kept himself afloat by the use of his right arm. The doctor manifested great presence of mind, and, evidently anticipating a fatal result, suggested prayer. Some time after, seeing Cook with the rudder, the doctor cried to him, "For God's sake give me that for my boy." Cook at once pushed the rudder in the direction of the doctor, and swam for the oar, which he was able to get hold of. The abandonment by Cook of the means of keeping himself afloat was, in these circumstances, an act of self-denial approaching to heroism. He saw Dr Hirschfeld catch the rudder and try to place his son upon it, and it was imagined that they might manage to float by it for a considerable time. Poor Finlay was the first to succumb; he let go his hold of the oar, his head drooped, and he disappeared. About five minutes after the doctor's cries for help and assistance for his boy ceased, and the survivors knew that his struggle was ended. A boat approaches, and the two lads, after an immersion of more than half an hour, were happily rescued. The doctor's body and that of his child were recovered on Wednesday, that of Finlay on the Thursday following the accident. Seldom has a community been stirred to its depths as was Banff on this sad occasion. Every one mourned as if the loss was a personal one, and sincere

is the sympathy felt for Mrs Hirschfeld, who at this fell blow loses husband and only child. The doctor was born at Trieste, and was the only son of Mr Philip Charles Hirschfeld, now of the Isle of Man. He was educated at Edinburgh High School and University. He graduated M.B., C.M. in 1869, and was also a licentiate of the Royal College of Surgeons. During the course of his medical studies he acted for some time, first as house-surgeon and afterwards as physician, in the Royal Infirmary, Edinburgh. On taking his degree he proceeded to Germany, and, as a member of the British Surgical Ambulance, took part in the Franco-Prussian war in 1870-71. He was in service before Metz and at the investment of Paris, and always volunteered to go to the front. Returning home, he found his first professional employment at Banff in the end of 1871, when he was assumed as a partner by Dr Manson. He married, six years ago, Jane Elizabeth, daughter of the late William Chalmers, manager of the Northern Insurance Company, Aberdeen. They had but one child, the bright boy of three years who was lost along with his father. Dr Hirschfeld, at his untimely death, was only thirty-three years. He lies, along with his child, in Nellfield Churchyard, Aberdeen, whither his remains were accompanied by a large number of mourning friends. The doctor was a man of rare promise in his profession, being noted especially for his surgical operations. The writer cannot speak professionally on the matter, but frequently has he heard those who can, speak with admiration at the skill displayed by him in the most difficult and intricate operations. Sad that such a bright, useful life should so soon have ended for his friends and for his country. There can be no doubt that he lost his life in the noble but fruitless attempt to save his child. His epitaph may be said in one line—*Brevi vivens tempore, coplevit tempora multa.*

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- WM. CAYLEY, M.D., F.R.C.P.,—On Some Points in the Pathology and Treatment of Typhoid Fever. J. & A. Churchill, Lond., 1880.
- W. H. CORFIELD, M.A., M.D.,—The Laws of Health. Longmans, Green, & Co., Lond., 1880.
- ARTHUR GAMGEE, M.D., F.R.S.,—A Text-book of the Physiological Chemistry of the Animal Body. Macmillan & Co., Lond., 1880.
- SAMUEL W. GROSS, M.A., M.D.,—Practical Treatise on Tumours of the Mammary Gland. H. K. Lewis, Lond., 1880.
- E. KLEIN, M.D., F.R.S., and E. NOBLE SMITH, L.R.C.P.,—Atlas of Histology. Part XII. Smith, Elder, & Co., Lond., 1880.
- Nederlandsch Tijdschrift voor Geneeskunde, tevens Orgaan der Nederlandsch Maatschappij tot Bevordering der Geneeskunst. Nos. 1-40. F. van Rossen, Amsterdam, 1880.
- DR. ROBINSKI,—De l'influence des eaux malsaines sur le développement du Typhus Exanthématique. Asselin et Ce., Paris, 1880.
- St George's Hospital Reports. Vol. X. J. & A. Churchill, Lond., 1880.
- St Thomas's Hospital Reports. Vol. X. J. & A. Churchill, Lond., 1880.
- Sterfte-Atlas van Nederland over 1860-1874. F. van Rossen, Amsterdam, 1879.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Introductory Address, delivered at the Opening of the Edinburgh Medical School, on 25th October 1880.* By FRANCIS W. MOINET, M.D., Lecturer on Materia Medica and Therapeutics.

GENTLEMEN,—It has devolved upon me, in the name of your teachers, to address to you this morning a few words of welcome and encouragement on the occasion of the commencement of the Medical Session; and although there may be more than one opinion among us as to the benefit of such addresses, there can be only one, as to the cordiality of our welcome, both to you who are present for the first time and to those of you who have returned to continue, or complete your studies.

We welcome you as fellow-students in a noble profession, which has for its aim the prevention and relief of human suffering, in striving to accomplish which you will find ample reward for all the labour of mind or body you may expend upon it. I take it for granted, gentlemen, that you have chosen your profession thoughtfully, for the love of it, because unless you feel your hearts are in the work you will neither do justice to yourselves nor to it. It is one which should thoroughly commend itself to you in its aim and endeavour, apart from all extrinsic questions such as mere pecuniary advantage. Of course, the labourer is worthy of his hire in this as in other professions; now, however, is the time to think of your work only, and how best you are to prepare yourselves for the exercise of its responsible duties. Still, as in a great measure your future success will depend upon how you employ your time now, it is well to bear this in mind as an encouragement to work, although your best reward will be the consciousness of work honestly done. In thinking over what I should address you upon this morning, it appeared to me that our time would be most profitably occupied in directing your attention briefly to what I consider is the right spirit in which you should prosecute your studies. This, I feel, can best be done by trying to impress upon you the importance of entertaining a high opinion of your

profession and a clear idea of its responsibilities. The first will make you careful to do nothing that will tarnish its reputation, and the second should stimulate you in your work, so that you will do credit to yourselves and to the profession for which you are now going to qualify, and so maintain, if not raise, the estimation in which it is held by the public, and increase its powers of usefulness. I need not compare our profession with others; but I will quote a sentence which I came across in a quaint little volume¹ which I happened to be reading when I was turning over in my mind the subject of this address, and which expresses the spirit I wish you to possess. After mentioning the important duties of an editor, it goes on to say, "The consciousness of this is a weight incommensurately greater than that which is experienced in other professions—by the barrister under his crucial brief, by the doctor under his most critical case. The one may lose a single client, and the other fail over a single patient, but the world will not blame either if he has taken proper pains, while the failure of an editor is apparent to the whole of his huge constituency, and the chances are that no one will inquire into the cause, or care whether he blundered conscientiously or not." Like the author I have quoted, you should magnify your profession, not necessarily by making invidious comparisons, but by taking a high view of its aim and work. This will enable you to fulfil worthily any duties you may be called upon to undertake. It should not be sufficient that the world does not blame you for failure over a single case; it cannot always judge whether the proper treatment has been applied. You must judge yourselves by a much more strict standard, and be satisfied that you have used all the possible means in the treatment of your case which science and experience have gathered for your use. This is the responsibility which you undertake when you go out into the world to practise your profession; but what I am desirous of inculcating on you this morning is, that this responsibility, if properly realized by you now, will be the best spur to you to work hard as students, by doing which you can alone hope to bear it with comfort to yourselves and with benefit to the public.

Perhaps some of you may be saying, "Time enough to think of that when we have got our degrees." To that I most emphatically say No. Now, at the commencement of, and during your studies, is the time, because the sooner you realize the high aims of your profession the sooner will you study in earnest so that you may be able to carry them out worthily. I have often thought, if students would only consider what a patient does when he places himself in a doctor's hands, *i.e.*, the care of his health, the value of which to himself and the community cannot be appraised, they would work harder than perhaps they do. It is not sufficient that the doctor should do his best for his patient unless that is the best which his abilities can do in accordance with the current position of medical science.

¹ *Journals and Journalism*, by John Oldeastle.

and which can only be done by those who have made a proper use of their medical education, and striven to acquire a thorough knowledge of the various subjects contained in the curriculum. Equal attention should be given to each subject of study; if anything, more should be paid to the subject or subjects which appear least interesting, those which are appreciated being sure to command sufficient. All your subjects of study are so intimately connected with each other, and with the practical application of our knowledge in the treatment of disease, that ignorance in any one of them will be sure to be a cause of future difficulty or error in diagnosing or treating your patients. And if you appreciate what this may involve, you will now take the only means by which it can be avoided, more especially as such a failure entails much more serious consequences than a failure in some other business relations. A patient's health and life rank higher than his purse; hence the greater responsibility lies with him who deals with the former. This being the case, you should remember it now; the sooner you appreciate it the less chance will there be of your ever feeling this responsibility too heavy, because you will thus see the importance and necessity of acquiring a sound knowledge of the science of medicine. So prepared, the feeling of responsibility will never be a source of weakness, but of strength. It is only in weakness that it is felt to be oppressive, and that weakness consists in not being properly prepared to bear it.

This trust which a patient places in us should make us careful to be honest in our dealings with him, and to avoid any semblance of quackery. When a medical man allows the thought of the fee to come before other considerations, he certainly is not to be trusted as a worthy disciple of the healing art. In this way we will render ourselves more worthy of the confidence which our patients place in us, either as a body or individually, a confidence which is of mutual benefit; it spurs us on and encourages us in our efforts to do our best, and repays them, in receiving the result of these efforts when they apply to us in their need. But, gentlemen, our responsibility goes further than this. From our knowledge of disease, and our opportunities of studying it, we are the best qualified to spread useful information as to the causes of disease, and in some cases as to the preventive means that can be employed to arrest their progress or check their development, and, when necessary, get them legally enforced for the benefit of the community. To do everything in our power to further this object is, I hold, undoubtedly the duty of every medical man. Yet it is truly astounding that, while the profession are unanimous—and I suppose you may say ninety-nine parts of the community—as to the benefits of the Vaccination Act, we find the Government is weak enough to temporize with a few ignorant anti-vaccinators—ignorant, that is, of judging the question from any point but from one of perverted selfishness. Such short sighted policy cannot be too strongly condemned.

Preventive medicine has of late years, I am glad to say, been receiving more attention at our hands, and also at those of the municipal authorities, and it is in this department of our work that most important discoveries remain yet to be made. It is only by preventive medicine that those epidemics which play such dreadful havoc in our nurseries can be controlled or prevented, perhaps in time even stamped out, like smallpox, which was at one time, and not so many years ago, such a scourge in these islands. If the expense of such epidemics were calculated, it would, I feel confident, be found an economical as well as philanthropic plan to increase the staff of medical officers of health.

Neither should we neglect to warn our patients when we know that their habits or occupations are liable to be injurious to health. There is no doubt that many are now living and working at a higher rate of pressure than is conducive to health or longevity. By many too dear a price is paid for wealth or fame; and some gather the former or reap the latter only to regret their inability to enjoy them, unless such enjoyment as consists in paying doctors' bills. The price is thus too often paid in coin that neither wealth nor fame can redeem. I am inclined to think sometimes that it would be an advantage in the present day to recur in some cases, especially in the case of masters of households, to the Chinese plan of paying the medical attendant only so long as his patient is kept in good health; the only danger would be of its begetting a feeling of personal irresponsibility and dependence on the part of the patient. But I have no doubt it would be frequently for the advantage of the patient if the doctor saw more of him when apparently he did not require his aid or seek his professional assistance. In other words, if our professional advice were more frequently sought for as to the daily mode of our patients' lives, as to their work, play, or diet, there would be fewer diseases for us to treat. Our attention could then be more profitably directed to prevent, rather than to cure disease, which, if not easier, would be at least more satisfactory, I should think, to the patient, and of greater benefit to the community.

I would also urge upon you the necessity of being careful in ordering alcoholic stimulants and narcotics. I do not believe that it is often the case that a medical man, ordering a patient alcohol is the first cause of engendering a habit, the fatal effects of which I need not dwell upon. Even in the case of those who have tried to excuse themselves under the plea of the doctor's order, I am afraid it is only advanced as a respectable cloak for their indulgence, and to obtain what otherwise might be unobtainable. Still, as I consider alcohol a most useful remedy in the physician's hands, and while I would not withhold it on account of this fear unless in an individual who had already been known to be too prone to its indulgence, I would recommend you to be careful to order its discontinuance to the patient's friends when satisfied that it is no longer required to meet the exigencies of the case. Then, if the patient

continues to take it, it is on his own responsibility, and I am quite confident that such an employment of alcohol could not be blamed as a cause of its abuse, as in the majority of cases its employment is not a novel experience for the patient.

It is different, however, in regard to our responsibility in ordering our patients narcotics, as opium, morphia, chloral, etc. These are substances with which they rarely become practically acquainted unless when prescribed by a medical man; and in view of the extent to which indulgence in such narcotics has of late years gone, and considering that, although their effects are not so patent or disgusting to society, the ultimate result is almost as pernicious to the individual as in the case of the drunkard, we should be careful, in ordering such drugs, that we do not allow them to be taken too frequently, or for longer than is absolutely necessary, and warn our patients of the risk they run if they heedlessly disregard our advice and use them on their own responsibility. When we have to treat those of extremely nervous or excitable temperaments, we should avoid such remedies as much as possible, and only give them from our own hands, as these are the persons who are most susceptible to their influence, and who at the same time are too often most deficient in self-control or self-denial. In regard to this I think it is worth consideration whether some further restriction should not be placed on the dispensing of prescriptions containing such drugs, so that they should not be dispensed *ad infinitum*, but only within a reasonable time from the date of the prescription, and not be repeated unless redated by a medical man. This would put it out of the power of those employing such a remedy simply to indulge the crave of a depraved appetite, because the apothecary would readily understand that such drugs are used in the greater number of cases only for temporary purposes, and that perpetually to renew prescriptions containing them is not aiding the physician in carrying out his treatment, which he is bound to do, but simply pandering to a dangerous habit. Or the doctor might, if he considered it better, not give such prescriptions into his patients' hands, but order them himself, which, however would not obviously be possible or convenient in all cases, as in consulting practice.

You will also remember, gentlemen, that as medical men you must often necessarily be the confidants of your patients, both in regard to personal and family matters, which you must carefully respect. Not only the health, but often the happiness, of families depends on your discretion. The only use that such knowledge can be applied to is in behalf of the patients themselves, and never to satisfy the idle and dangerous curiosity of neighbours or friends. You should cultivate the habit of reticence about your patients; even in professional circles cases should only be mentioned anonymously. Then, gentlemen, if I do not weary you, I would add that on you will also rest the responsibility of doing as much as

lies in your power to advance the science of medicine in your day and generation. It is not given to many to enrich our literature by some brilliant discovery. Ability and opportunity do not always go hand in hand. It is only left to a comparatively small number to follow the experimental method of research, either from special aptitude, inclination, or other circumstances. Still, a great deal can be done by the observant student by carefully studying the symptoms and causes of disease and the effects of his prescription, as he may thus obtain facts from his experience which may be of great importance in paving or pointing the way for further discoveries; or by finding out new applications for old remedies, he may add to our power of successfully treating morbid conditions which cause suffering or endanger life. You will thus escape the danger of falling into a habit of mere routine which is fatal to that healthy spirit of inquiry which would stimulate us and give fresh interest to our daily work. Have this interest, and you will be always finding some new subject of study. With your mind always on the alert, you will tackle to your work more kindly; there will be less effort, and it will be better done.

I have thus tried briefly to place before you a few thoughts on the responsibility you ought to feel when you enter upon the practice of your profession, and which I think it will be for your advantage to appreciate now during your medical studies, because it will incite you in your work, not merely to pass your examination, but to attain as complete a mastery as possible of the different branches of your medical curriculum; and I am sure you will not think it out of place if I attempt to give you a few hints as to the manner in which you should pursue your studies most advantageously to this end. Bear in mind that now you are entering upon your life's work, and one which will demand all your energies, and especially a sound mind in a sound body. Do not neglect your physical health; and while I urge you to exercise your bodies as well as your minds, do not indulge in one at the expense of the other: you will enjoy both work and play better, and profit more by doing both regularly and heartily and at the proper time.

Do not cram; it may enable you to pass an examination, but it will never give you that mental grasp of your subjects which will hold any length of time. Work regularly: keep up with the class work in your reading. You will thus economize both time and labour; the lectures will interest instead of wearying you, and the facts will be so impressed on your memory that it will neither fail you at the examination-table nor at the patient's bedside. Give equal attention, I repeat, to all your branches of study—more, if possible, to those which interest you least, as you will be apt to be careless with them; and this is to be avoided, as the value of your opinion will in great measure be in proportion to your knowledge of all the subjects, their inti-

mate relation necessitating this. I would also say it is too soon during your student career to think of devoting your attention to any special branch of the profession, at least to do more than think of it, as then you would run the risk of doing what I have just said you must avoid, namely, sacrificing some subjects at the shrine of the others.

To be a good specialist you should be strong all round. After you have obtained your diplomas will be quite time enough to direct your studies to such an object, and then you will appreciate the value of what I say. Diseases of special organs have such a close dependence in many instances upon constitutional conditions that it is impossible to sever the study of the part from the whole if you are to be successful in your treatment. And this leads me to say that it is not sufficient for you to diagnose your patient's malady, although it may be a proof of your acumen; you must also be able to select from the store of remedies at your disposal the one best fitted to suit the indications of the case, and this can only be done by those who have given sufficient attention to the study of *materia medica* and therapeutics. When possible, let your practical and theoretical work go hand in hand. It is a great assistance in impressing it on your memory and rendering it more interesting. These hints I offer you, gentlemen, as the results of experience, to help and guide you in going through your medical curriculum; and I give you this encouragement, that if you put your hearts in the work now it will surely become a pleasure, and once that is the case you need not fear examinations, responsibilities, or the attainment of professional reputation and a fair amount of worldly success. But a few words as to the Edinburgh School of Medicine, at which you have selected to pursue your studies. I may safely say it is well equipped to give you a sound training for your profession. It is composed of intra-mural, or University, and extra-mural lecturers. We the extra-mural lecturers represent the original Edinburgh School of Medicine, of which the University is only a younger branch which has been richly nourished from this its parent stem; only, to look at the outward appearances of our respective class-rooms, you would hardly think so. Still, such is the case; and if our outward appearance is not so imposing, if our habitations appear to be rather scattered, I venture to say it is a sign of our strength. Look at the number of our lecturers, several on the same subject. Why, no university could hold us all. This, then, is evidently to your advantage; it spurs on teachers as well as students. We are, however, only rivals in teaching you thoroughly the groundwork of your profession, to arm you for your combat with disease and suffering, so that you will be able to bear the responsibilities of which I have spoken with comfort to yourselves and benefit to society.

ARTICLE II.—*On the Radical Treatment of Hernia with the Aid of Catgut and Listerian Antiseptics.* By THOMAS ANNANDALE, Regius Professor of Clinical Surgery in the University of Edinburgh.

It is scarcely necessary to remark that operative treatment for the obliteration or removal of the sac, with the hope of causing the radical cure of a hernia, is no new proceeding.

The various methods from time to time suggested and practised for this purpose do not now possess the confidence of surgeons—(1) because the risks of such operations are not slight; (2) because the results obtained are rarely satisfactory.

Owing to the employment of catgut as a subcutaneous ligature or suture, and the introduction of the Listerian antiseptic treatment of wounds, attention has, within the last few years, again been directed to operative procedures on the hernial sac; and since Mr Lister, in his address to the British Medical Association at Plymouth in August 1871, related his experience of two most interesting cases which he had treated with these aids, many patients have been operated upon according to his principles.

Dr Isidor Israelsohn has recently published his most interesting dissertation on this subject, and in it he has collected seventy-one cases of the radical operation for hernia performed with antiseptic precautions by various surgeons. My house surgeon, Dr Waters, has kindly analyzed the list of these cases, and I learn from him that sixty-six of these operations were successful, the result of one was not given, and four patients died. It further appears that, of the sixty-six, fifty-eight remained free from return of the hernia at varying intervals after the operation, and in eight the hernia returned sooner or later, but in some of these cases only to a slight extent.

As far as I know, four methods have been employed with the aid of Listerian antiseptics.

(1.) Ligature of the neck of the sac alone.

(2.) Ligature of the neck of the sac, with invagination of the ligatured sac into the abdominal opening.

(3.) Ligature of the neck of the sac, and excision of the sac below the ligature.

(4.) Ligature of the neck of the sac, with excision of the sac, and stitching together the margins of the abdominal opening.

Having used all these methods, I have no hesitation, from my experience, in giving the preference to the fourth plan. Simple ligature of the neck of the sac is not unfrequently followed by suppuration, or by sloughing of the sac below the ligature, and consequently the ligature either gives way, or only a very slight obstruction results to the re-descent of the hernia.

To the second plan there are much the same objections.

The third plan answers very well in some cases; but the fourth method gives the best results, and is most likely to be followed by a thorough plugging of the abdominal opening.

The operation, then, which I advocate and practise is to expose the neck and upper portion of the sac by a free incision, to make a small opening into the sac, to carefully return the contents, and, in the case of adherent omentum or intestine, to ligature and divide adhesions, to separate the sac from its attachments to surrounding textures, to draw down the sac and apply a catgut ligature round its neck as high up as possible, to cut away the sac immediately below the ligature, and then to stitch together with a continuous catgut suture the margins of the abdominal opening, the stump of the ligatured neck, and the surrounding cellular tissue. The whole operation and the after treatment are performed under strict Listerian antiseptic principles.

One advantage of this method is that it is applicable, with perhaps some little modification, to all the varieties and all the conditions of hernia, with very few exceptions.

The risk of this operation, if carefully performed, I believe to be slight, for it would appear that a hernial sac, unless of very recent origin, is not by any means sensitive to serious inflammatory action, and it can therefore be handled and operated upon with wonderfully little risk. I will now refer to the classes of cases in which the operation may be used.

(1.) In cases of strangulated hernia.

In January 1872 I operated upon Mrs M., æt. 70, a patient of Dr Burns, for strangulated femoral hernia. On opening the sac a knuckle of congested gut was found, and a large piece of omentum, the latter being firmly adherent to the sac. Having divided the stricture, I ligatured the omentum with catgut, cut it across, and returned the intestine and ligatured stump of omentum into the abdomen. I then separated the sac from the surrounding textures, drew it down, and having applied a catgut ligature round its neck, cut away the sac and adherent omentum. The result was most satisfactory, and pleased me so much that since then it has been my practice, in all cases of strangulated hernia in which the gut was in a proper state to be returned, and in which a distinct sac existed, to adopt this proceeding; but during the last two years I have, in addition, stitched the margins of the abdominal opening together in the way already described. In illustration I relate the following case:—

Miss L., æt. 32, seen with Dr Somerville of Galashiels on the 21st of January last. She had suffered from an irreducible femoral hernia for three years, and on the morning of the day I visited her she was seized with symptoms of strangulation shortly after straining herself in lifting some heavy books. The usual operation for strangulated hernia was performed, and on opening the sac it was found to contain a large knuckle of gut and a portion

of adherent omentum. Having divided the stricture and ligatured and cut across the omentum, the gut was returned, the neck of the sac ligatured, the sac and adherent omentum cut away, and the stump of the ligatured sac carefully stitched to Poupart's ligament and to the surrounding tissues. She made an excellent recovery, and now is able to go about with perfect comfort, but wears a light truss as a matter of precaution.

I could relate other cases of a similar nature, but it is unnecessary. This addition to the ordinary operation for strangulated hernia does not in any way add to the risk of the operation; and I can say from experience that it is not only an assistance in preventing descent of the hernia during the healing of the wound, but it is also a valuable means of diminishing the risk of the hernia returning in the future.

(2.) In permanently irreducible hernia.

The risks connected with hernia of this kind, and the difficulty of treating such cases, have been experienced by all practical surgeons. At any time the condition of strangulation may result, and the risk is increased owing to the difficulty of effectually applying a truss or bandage so as to prevent a further descent of the abdominal contents. The operation advocated in this paper is perhaps of more value in this class of case than in any other, and I offer a few cases in illustration.

CASE I.—Mrs C., æt. 50, admitted into my ward on May 24, 1880, suffering from a large irreducible femoral hernia the size of an infant's head. A swelling was first noticed in the region of the hernia five years before her admission, and until eighteen months ago was reducible. Since then it has been irreducible, and during the last few months has given her so much inconvenience that she required to lie almost constantly on her back. One week after her admission the operation already described was performed, and as a large mass of omentum was adherent to the sac it was ligatured and cut away. She was dismissed cured and wearing a light truss on the 14th of June.

CASE II.—Mrs —, æt. about 40, the wife of an esteemed medical friend, was brought to me by her husband a few months ago on account of an irreducible femoral hernia. She had noticed a swelling in the femoral region for six years, but it gave her no trouble until August last, when it became suddenly larger and caused pain and sickness, which passed away after resting and pushing back a portion of the tumour into her abdomen. Shortly after this the swelling again increased suddenly and gave rise to similar symptoms, which, however, passed off when treated as before. An examination of the swelling and a consideration of the history of the case caused me to diagnose it to be one of irreducible femoral hernia, the result of adherent omentum, and I advised operation to prevent the risk of strangulation. Her husband, being naturally anxious as to the question of

operative interference, asked Dr M. Duncan, who was in Scotland at the time, to meet me in consultation, as he had previously attended my patient. Dr Duncan agreed with me as to the advisability of the operation, which was performed in the usual way on the 6th of October. A large piece of adherent omentum was present in the sac, and it was ligatured and cut away along with the sac. In less than two weeks the wound was quite healed. A few days after a light truss was applied, and the patient returned home within three weeks after the operation.

CASE III.—J. R., æt. 44, admitted June 15, 1880. Two years and a half before admission the patient strained himself, and after this a swelling gradually appeared in the left groin and passed down into the scrotum. It was never perfectly reducible, and the patient, being unable to wear a truss, could not follow his employment, which was that of a miner. When examined there was found in the left side of the scrotum a swelling the size of a child's head. This swelling had a distinct neck passing up into the abdomen, but only slight impulse was obtained when the patient coughed. The corresponding testicle lay on the anterior aspect of the tumour, and the tumour itself was somewhat lobulated, and felt like a fatty growth. The patient, being anxious to obtain relief, requested me to operate, and accordingly I made a free incision over the neck and upper part of the hernia, and in doing so exposed the testicle and cord, the constituents of the latter being spread over the tumour. The testicle and the constituents of the cord being held away, a very thin sac was exposed, and on cutting into it a large mass of adherent omentum appeared. On tearing this aside a portion of the large gut, with fatty processes attached, showed itself, and on examination this contained gut was found to be the sigmoid flexure of the colon and a portion of the descending colon. Further examination determined that there was no true sac on the posterior aspect, but the large intestine, uncovered by peritoneum, formed the posterior wall of the tumour. With time and care the adherent omentum and the adhesions of the gut to the tissues behind were ligatured and divided, the whole contained gut was returned, and the remnants of the sac were drawn down, ligatured, and cut off, and the margins of the abdominal opening stitched together in the usual way. One month after the operation the wound was healed and a light truss applied. The patient returned home well on the 19th of July.

CASE IV.—I must now refer to the only fatal case which has occurred in my practice. At the beginning of last year I met in consultation Dr Traill of Arbroath in connexion with the case of Mr S., æt. 50. For many years he had suffered from a scrotal hernia on the right side, which gradually increased in size until it formed a swelling which reached nearly to his knee. For two years it had been irreducible, and as he could wear no truss or bandage his life had become miserable to him, and he was anxious to obtain relief by

operation or by any other means. On the 22d of April of the same year I exposed by an incision the neck and upper part of the sac, and, without opening the sac, endeavoured, but without success, to return its contents into the abdomen. Finding that the contents of the hernia were adherent to the sac, I opened the sac, and discovered that a large piece of adherent omentum was the cause of the irreducibility. When the sac was opened a large quantity of the small intestine escaped, and it was with some difficulty that this gut was returned. The adherent omentum being ligatured, and the contents of the sac, which consisted of nearly the whole small intestine and a large quantity of omentum, having been returned, the neck of the sac was ligatured, the sac cut away and stitched to the margin of the external ring in the usual way. For three days the patient progressed favourably, but after this symptoms of intestinal obstruction showed themselves, and he died two days after. My opinion is that some twisting of the gut took place and caused the fatal result. I attribute the non-success of this case principally to the large size of the hernia and to the protrusion and return of so much of the small intestine, a proceeding likely to lead to some malposition of the gut.

These cases, together with others of a similar nature which have come under my observation, are, I venture to think, an encouragement to treat by operation permanently irreducible herniæ when the patient's condition admits of such a proceeding.

(3.) In Reducible Hernia.

I am no advocate for operative interference in cases of reducible hernia unless the condition is irremediable by the application of a truss or other means, and is giving rise to serious inconvenience. When operative treatment is required in these cases I am inclined to advise the adoption of the proceeding of which this paper treats.

This proceeding has certainly the one important advantage that the surgeon sees what he is doing, and I have not found that the free exposure and handling of the parts is attended with any special risk. Mr Charles Steele¹ of Bristol deserves the credit, as far as I can ascertain, of having been the first to treat a reducible hernia on the antiseptic principles. His operation was performed in May 1873, and was most successful. In May 1876 I read before this Society an account of a case, which I believe to be the second on record, operated on by myself in January of the same year, and since that time many operations have been performed, more particularly by continental surgeons. Let me give the notes of a few cases, which, however, do not represent all that I have operated upon. Owing to the loss of case-books connected with my wards in the old Infirmary, I am unable to give a complete list.

CASE I.—P. B., æt. 45, admitted Nov. 27, 1876, on account of a

¹ *British Medical Journal*, November 7, 1874.

reducible femoral hernia, the size of a large orange, which had existed for several years. The patient had worn various trusses, which, however, were not successful in keeping up the hernia. Shortly after his admission I performed the usual operation. Some suppuration in the cellular tissue of the groin followed the operation, but he made a good recovery, and was dismissed with a light truss on the 15th of February 1877.

CASE II.—R. M., æt. 45, was admitted February 14, 1878, suffering from a large reducible inguinal hernia. He worked in an iron-foundry, and after trying many trusses he was obliged to give up his employment, as the hernia could not be retained by any of them. The usual operation was performed, and he was dismissed cured with a truss on the 25th of April.

CASE III.—A. B., æt. 42, admitted June 1879 with a reducible inguinal hernia on the right side. He had been dismissed from the army on account of his condition. In addition to the hernia, it was found that the testicle upon the same side had not properly descended, but lay a little external to the abdominal ring. The position of the testicle prevented a truss being used, and as the patient suffered great inconvenience from the hernia, the usual operation was performed, and the testicle, which was much atrophied, was at the same time removed. This patient was dismissed cured with a truss on the 21st of August 1879.

CASE IV.—J. M., æt. 24, was sent to me by the patient R. M., who had found himself perfectly able to work after the successful operation upon himself. He was suffering from a reducible scrotal hernia which had existed for about three years, and which had latterly prevented him following his employment, although he had tried several trusses. The usual operation was performed, and he was dismissed cured with a truss on the 23d of January 1880.

I do not say that these cases which I have related are necessarily permanent radical cures, but I feel confident that the operations performed relieved them of a condition otherwise incurable, and permitted the patients to wear with success a truss and to go about and follow their employment without risk. Whether the operation is inferior or superior to Wood's method of radical cure in cases of reducible hernia I am not prepared to say, as further experience of the results of the former operation is required, but it certainly has the one advantage that it is applicable, as I have already mentioned, and I hope proved in this paper, to all herniæ, and to their various conditions, with very few exceptions.

ARTICLE III.—*A Rare Case of Bullet in the Brain for Sixty-five Years.* By ROBERT ELLIOT, M.D., Carlisle.

In the winter of 1847-8 I became acquainted with a military pensioner of good intelligence and exemplary character, William

Robinson by name, born at Kendal, in Westmoreland, in the year 1795. He had lost his left eye, the coats of which had shrunk entirely within the orbit, and he wore a small covering to conceal the defect, and for comfort. He was otherwise in the possession of all his faculties, bodily and mental, and not in any other way did he present any noticeable peculiarity. He was an unexceptionable witness as to intelligence, integrity, and reliability, both as to his accuracy of observation and the clear and unvarying character of his narrative, which was to the following effect:—At the age of eighteen, when a private in the 73d regiment, he fought in Switzerland in July 1813, and the year following at Antwerp. In the year 1815, in the month of June, he was at the battle of Waterloo, where he was shot in his left eye. He instantly fell, and was reported as dead by his right-hand neighbour, Sergeant Morris, who makes the statement in his *Recollections of Military Service*, quoted in the obituary notice in the *Fleetwood Chronicle* of Mr Robinson's death, which took place on Sunday, the 10th of October of the present year, at the age of 85. Mr Morris says, "I have stated that, on the 18th, a man on my left hand was struck by a ball in the left eye, and fell backwards; and, having thus seen him fall, I, when the roll was called, stated that he was killed. Judge, then, my surprise when he joined us at Paris! The ball was still in his head, and could not be extracted. He was not fit for duty, and was sent to England."

It was in Carlisle that I made the acquaintance of Mr Robinson, some 33 years after the remarkable escape from death described in the above quotation. After careful inspection of the scalp and manipulation of the cranium, especially over the occipital region, I could not obtain any indication that the ball which was said to have entered by the left orbit had anywhere effected an exit from the cranium. Nor have I any reason to doubt the accuracy of observation and judgment of this intelligent and honest man, when, as has often occurred, he described to me his feelings at the back and lower part of his head, feelings never noticed before the destruction of his eye, but frequently since, and not only so, but reproducible at any time on lying down or on turning round in bed. These feelings were such as would be expected to arise from a bullet which had destroyed his eye, and traversed the brain, but had not effected its escape. He never, to me, varied in his description of the sensations experienced when he lowered his head, or (when it was down) he turned it from side to side. Such a case resembles that of a young military officer in whose hands a gun burst, and so fearfully fractured his skull in front that portions of the bone and even of the begrimed brain had to be removed, yet the young man recovered and lived for several years, and at last died of fever. In this well-known case¹ an inspection of the head was obtained, and

¹ See *The Dublin Journal of Medical Science*, about the years 1830 to 1840.

the marvellous discovery made that some two or three ounces weight of the shivered lock of the gun had actually been ensconced in the anterior portion of the brain for some two or three years without obvious or recognised impairment of the faculties ascribed to the mental organs.

ARTICLE IV.—*Case of Needle in the Urethra extracted through Posterior Wall.* By JOHN McNAUGHTAN, M.D. Glasgow, Resident Medical Officer, General Prison, Perth.

J. R., aged 22, whilst endeavouring to clear away some imagined obstruction to micturition, allowed the needle which he was employing to slip from his grasp and disappear up the urethra. The needle was a large one, $3\frac{1}{2}$ inches long, with a broad flat point tapering to the extremity, such as is used in sack sewing.

He tried to extract it himself, but found that his efforts not only caused him pain, but were forcing it further down. I was then summoned, and found that the needle, which had been introduced blunt end first, had nearly reached the neck of the bladder, the point being felt about midway down the penis. Removal was first attempted by gentle manipulation; afterwards long narrow forceps were applied, but, owing to the tapering smoothness, a satisfactory hold could not be got, and even when the slightest traction was used the point was found to catch in the sides of the urethra.

These methods being impracticable, and nothing better presenting itself, I resolved to force it out rather than let it slip into the bladder; so, getting one hand well back in the perineum behind the hilt of the needle, and steadying the penis with the other, I made firm pressure in a direction forwards and upwards, and gradually drove the point through the posterior wall of the urethra, working it out till an assistant was enabled to seize hold and extract. A catheter was immediately introduced, and kept tied in for a couple of days, in case the urethra had been injured by the pressure on the hilt, and also to guard against urinary fistula. Slight pain in micturition and some irritability of the bladder continued for a few days afterwards, but, those symptoms passing off, he made an excellent recovery, the wound in the urethra healing rapidly and leaving not a trace of its locality.

There is little doubt that, had I not managed to remove this needle in the manner I did, it would very soon have slipped fairly into the bladder, from which position it could only have been removed, as may well be imagined, by a dangerous and extremely difficult operation.

ARTICLE. V.—*The Parasitic Fungi of the Human Ear: Etiology, Prophylaxis, Treatment, Applications to General Therapeutics.* Read at the Congress at Reims (Association française, 1880), by Dr LÆWENBERG of Paris. Translated by J. J. KIRK DUNCANSON.

THE attentive study of a certain number of cases of otomycosis—that is to say, of the affection provoked by the development of microscopic fungi or mouldiness in the ear—has revealed to me several particulars regarding the pathology and etiology of this disease.

Among these peculiarities are some more particularly interesting to those who give themselves up specially to otological studies, which have been communicated by me to the special section of the British Medical Association (session 1879, at Cork). But further, I have found certain facts which seem to me equally to merit the attention of those of our fellow-members who are in general practice, and it is from this point of view that I ask permission to look into the disease with which we are occupied. If we sum up the *essential characters of otomycosis*, we find a deafness reaching sometimes to the almost complete suppression of hearing, then buzzings more or less painful, a peculiar discharge, watery and scant, and often pain. But one of the most striking symptoms is an itching which at times becomes intolerable. Filmy substances form themselves in the ear, whitish and lardaceous, and often spotted with green, brown, or black by the accumulation of free spores. Once these substances are removed, the symptoms disappear or grow less, till some new cryptogamic development provokes anew all the array of pathological phenomena. These alternatives may repeat themselves thus for many years.

The most interesting point, and that which possesses real importance from a practical point of view, is the *etiology* of this disease. We will see shortly that in the great majority of cases it is due to the use of common remedies such as are used daily in the treatment of other auricular diseases. It is principally with the design of disclosing the possibility of grafting a very painful disease on that for which the patient claims our care that I speak to you.

In a great number of cases the disease is brought on by the introduction of fatty matters into the outer ear. Most frequently these are oils—olive oil, sweet almond oil, etc. At other times they are lard, mild balsam, or some kind of ointment. In using these oily substances we do not sufficiently take into consideration that they all undergo a rapid decomposition whenever they are exposed to the open air even at an ordinary temperature, and still more so at the higher one of the auditory canal. The oils contain in solution some azotic substances, which, under the

influence of the oxygen in the air, produce special fermentation, the "*rancidity*." The temperature rises rapidly, the fatty neutral substances which the oils contain change into glycerine and fat acids. Thus the seeds of the mould fungi which are found everywhere find all that they require for germinating—oxygen and moisture in the atmosphere, heat, organized bodies in decomposition, and acidity, which greatly favours their development. The filaments of mycelium grow then with rapidity. The acid products of decomposition on the one hand, the presence even of the foreign vegetable bodies on the other, irritate the ear. Hence inflammatory action and watery discharge containing nitrogenous organic substances, which these cryptogams assimilate with energy.

The conviction of the destroying effect which fatty substances exercise in these cases—a conviction shared by other authors (see a very interesting memoir of M. Bezold)—has made me adopt the following rule for practice:—I forbid the use of fatty matters in the therapeutics of the auditory canal, of the membrana tympani, and of the tympanum, and I replace them by one of their derivatives, glycerine, which by its oiliness offers the advantages of these substances without possessing the inconveniences which I have just enumerated. (I make exception only for the remedies which—as, for example, phenol oil—are used in antiseptic dressing, which include, besides the oily matters, a substance absolutely deleterious to all organic germs.)

Besides the group of which I have just spoken we observe further cases of otomycosis where not a single oily matter has been employed. How can we explain the origin of the disease in these circumstances? I have been enabled to find another source of the disease, a source little expected, it is true. The otomycosis may be caused by the use of medicated solutions, having undergone changes which I will presently show to you. I discovered this cause of the disease long ago by the study of several cases of otorrhœa with perforation of the membrana tympani, cases where the disease was progressing towards a complete cure when the recovery was suddenly arrested. The perforation, instead of continuing to lessen, remained stationary, and the running, which till then had been gradually diminishing, became again copious, at the same time being more watery than before. In some cases shooting pains and itchings were the result. However, the treatment, consisting of astringent instillations (tannin, alum, sulphate of zinc), which till then had produced excellent results, had not been modified! After having long sought for the cause of these phenomena, I found it at last by the aid of the microscope, which revealed the presence of filaments and of receptacles of aspergillus in the diseased ear, as well as in the medicated liquid which had been employed. We often see solutions of substances chemically pure in distilled water contain a little sediment even when they have only been prepared for a

few days. Well, I have found that the cloud which floats in these liquids is composed in whole or in part of mould filaments, often containing organs of fructification more or less developed. It was thus the remedy which had introduced the ready-formed fungi in the ear, and I think that this is the origin of the otomycosis in a great number of cases. Therefore it is important to inspect strictly the purity of the watery solutions employed in instillations or in injections in auricular therapeutics, especially where, the tympanum being perforated, the mould fungi might penetrate into the drum, and even to the cells of the mastoid process! It is from this view of things that I have got into the way of using either pure alcohol or alcoholic solutions, or else of submitting the watery solutions to ebullition before using them. As every germ and all mycelium suspended in a liquid die at the heat of boiling water, I boil from time to time the watery solutions intended for the treatment of diseases of the ear. Further, each instrument having penetrated into an ear affected with mycosis ought to be exposed to the heat of a flame or plunged into boiling water. These are the true means to prevent this disease. As to its treatment, as soon as the nature of the disease is discovered we should have recourse to parasitocidal remedies, such as pure alcohol, which kills effectually the spores and mycelia, and which the ear is able to bear perfectly, provided we begin to drop it in mixed with an equal quantity of pure water, and increase the concentration only gradually. It is necessary further to loosen and remove by injections the dead cryptogams and the debris of epidermis which yield or contain them.

It seems to me that the etiological considerations which I have just explained may be used beyond the limits of the aural speciality.

To many parts of the body we use watery solutions, and it ought to be equally possible, then, to introduce on the mucous surfaces not only the spores, but also completely formed fungi. There are cases of hypodermic injections where the introduction of the fungi might well explain the local irritation which often follows. Among the diseases due to the development of mouldiness I will only mention the most recently discovered, which has just been described by M. Leber. An ulceration of the cornea, due to a slight traumatism, showed increasing symptoms of surprising gravity accompanied by hypopyon and chemosis. It was only after a time that M. Leber discovered that the membranes which formed the base of the ulcer were composed of corneal substances felted with mycelium. Neither phenic acid nor sulphurous acid succeeded in stopping this growth, and it unfortunately ended in a complete leucoma. The reading of this article has made it seem possible to me that the parasites may have been introduced by one of the fluids used, solutions of atropine and of chloral. I gave myself up, on this point, to the microscopic study of the usual solutions in ophthalmology, and the first two specimens, which I obtained from an oculist friend, have fully

confirmed what I had suspected; the first, a solution of 4 centigrammes of sulphate of atropia in 10 grammes of distilled water, contained some flakes which were composed of mycelium of different kinds, with sporangia. In the second, a solution of 20 centigrammes of pilocarpine in 20 centigrammes of distilled water, there was a small deposit containing, besides detritus of every kind, some mycelium of a different nature from that of the other solution, and in a smaller quantity. That these collyria do not more frequently cause ocular mycosis is perhaps due to the fact that no solution exists in the continuity of the cornea, or at least in its epithelium, to admit of the parasites fixing themselves.

I cannot finish without recommending the adoption for all parts of the body, and especially for the eye, of the methods which I have just proposed for the ear. If we have to do with substances which will not bear ebullition in watery solution without decomposing or volatilizing, I propose to overcome the difficulty by the two following processes:—1st, We will preserve the active substances—alkaloids, for example—whose chemical composition and therapeutic destination permit, in an alcoholic solution, and we will only add, when they are to be used, water which has been previously boiled; or else, 2d, we will preserve these substances in a saturated watery solution (the concentration being unfavourable to the fungi), and we will add, at the time of using the medicine, water rendered sterile by heat.

ARTICLE VI.—*Notes on an Outbreak of Enteric Fever.* By T. GOODALL NASMYTH, M.B., C.M., Cowdenbeath.

Of late years considerable light has been thrown on the subject of typhoid fever, and certain causes in its production have been thoroughly demonstrated, and now recognised as facts. For instance, if the disease occurs in a dairy, as a result we have the disease spread over the area supplied with milk from that particular dairy very generally; or an epidemic arises in a village, on examination of the wells we find that there has been sewerage contamination, or that the sewers are defective in some manner. But can we positively say that enteric fever may not arise where we can neither trace any contamination of the water-supply nor any defect in the drainage, where there is no chance of it having been imported by its different vehicles? This is exceedingly difficult to decide, for it is impossible to say in some cases that there is deficient drainage, though we may suspect, and I believe that it is equally impossible to say that a given water is perfectly harmless. We may hear from the chemist that there are no nitrates, nitrites, free ammonia, etc., but can he demonstrate the germs which exist as certainly as they exist in air, and which are equally impossible of demonstration? Doubtless the time will come when, by more

attention to sanitary laws, the disease will be nearly unknown, but I can never expect that by any sanitary engineering the causes of the disease will be completely removed. When the people are more educated on the subject of public health the disease will be less prevalent, but that it will be completely stamped out requires great scientific accuracy in the various sanitary arrangements.

When once the total number of cases is very considerably lessened, the number that occur should be diminished by a very great ratio, for as one case of typhoid may be the manufactory for an unlimited number, the mere lessening of the majority by one tends to suppress an unknown number. So that an improved drainage and water-supply acts in two ways—

1. Recognised causes are removed.
2. The disease itself is thus so far prevented, and it is one of the most prolific causes.

In a district in which I am situated the disease is very common, and I venture to make some observations on it. I shall treat separately of four districts, A, B, C, and D. These are in a bleak and cold part of the country, varying from 300 to 450 feet above the sea. Climate, cold and damp; soil, stiff clay, and in some places deep moss and marshes.

District A is situated in more or less of a hollow, the ground dipping from three sides, the fourth gently sloping to the east, so that water can find its way from the district. In every other direction water runs to, and not from it, a point of importance* in the production of enteric fever. Of the districts B, C, and D, they are all on hilly ground, and are favourable for good drainage, if any means were adopted, which unfortunately is not the case.

To describe *District A* more fully. The houses are in rows, about fifty houses in each row, two rooms to each house, and in almost every case large families in each house. One of the rows is two-storeyed, and the rooms larger and better; and in this row I do not remember to have seen a single case of enteric. This row is situated on a slope, is better supplied with water, so that the open drain in front of the house is well flushed. Although there were numerous cases near this row, it escaped. This I consider a great fact in the etiology of the disease. Where the fever lurked was in the basin of the village, and where naturally the drainage was most imperfect, and it seemed as if it was impossible to prevent the constant occurrence of the disease. At this place the underground workings had subsided, causing the surface of the ground to subside to a depth of four or five feet, and this, added to the general configuration of the place, interfered very much with proper drainage. The first case I had to deal with was at this spot. In front of the door there was a fetid pool which had stood for months, the drain being destroyed by the subsidence mentioned. Into this pool all the filth and abominations from the houses near were flung, so that it became a horrid fermenting mass. It had existed for

some time. No case of fever had occurred, and advocates for the contagious theory might have said this was a proof in favour of their case. It so happened that a case did happen, but we can easily imagine that the pool might have been there a year and no case occur. Since this case happened several more did happen, but as long as six months intervened between them, and this is something for those in favour of the contagion theory and those in favour of the fermentation theory. There was no doubt, however, that this case did occur, and there in front of the door was sufficient proof, to my mind, that the cause was the fermentation of the organic matter deposited. It has been pointed out that workers in sewerage, in the manufacture of poudrette, and those living near districts where sewerage is used for agricultural purposes, do not suffer from enteric, as might be expected. In these cases there are modifying circumstances; they may become inured to the poison, or they may be treading on a volcano which may burst at any time. The latter I believe more likely. It may not happen to them for fifty years, or it may any day. I have seen in one house a boy recovering from typhoid, his brother lying in bed *beside him* eating his breakfast, regardless of the bed-pan with its typhoid stool, which, for convenience, was left at the foot of the bed, and that boy did not take the fever. What explanation can we give to this, and how often might this occur till one day it would inevitably happen that the disease would strike its victim? The stool may not have had time to ferment, but the vessel used was in use every day for weeks, and we may be sure that the poison lurked in it from insufficient washing and disinfecting. In every case in the district the cause of the fever was evident, and in cases where the symptoms of enteric were obscure, as I found them often to be, an inspection of the drains and the water-supply assisted me materially in the diagnosis. My experience was, that in the worst-constructed and dirtiest houses the cases were the most severe and most tedious. I had one patient ill for about six weeks, and recovered so far that he was walking about outside, and quite well, no symptom of fever, till another attack happened, but more intense than the first, and complicated with bronchitis. This patient died after having suffered for about three months. In the row where he lived there was a sewerage drain which, having been choked up, was lifted, and the putrid contents exposed to the surface, giving ample opportunity for infection by pure, simple, fermenting organic matter. I have seen an outbreak again and again arise apparently from the same cause, and the chances were, if the drain had been left alone, no outbreak would have occurred. Bad drains being, in my experience, worse than no drains at all, I believe that earth to a great extent, and free exposure to the air, have a great effect in disinfecting typhoid stools and rendering them less hurtful than where they are poured into a blocked-up drain, or defective in its construction. Of course, if the contents of a drain are suddenly

thrown out to the surface, the "elements," air and earth, have not time to destroy the poison before harm has been done; but if there is sufficient time and enough space, in the most of cases no harm will result. Example, no bad effects from irrigation. This brings me to a conclusion with District A, and I may briefly summarize my conclusions.

District A lies in a hollow, with insufficient outlet for drains; with too few drains, and of a bad construction and insufficient water to flush them; that in those places where the drains are in worst order, and the contents not flowing freely, and in consequence these cause pools of stagnant fermenting organic matter, typhoid fever is almost constantly endemic.

The next district I have to consider is not so fertile in the production of typhoid from several reasons, and I expect, from arrangements which are being made for a new and plentiful supply of water, the disease will almost entirely disappear, and cases only occur where there is gross carelessness on the part of the inhabitants.

The only row of houses where the fever occurred in *District B* is situated on the face of a hill, and exposed to the winds from every direction. Water can flow freely away from this row, and the open drain in front of the houses is made of brick, and can easily be flushed, if water were used for the purpose. All the sewerage is not emptied into this, the greater part being emptied over the ground in front of the houses, and allowed to percolate anywhere. A drain passes under this ground and issues out about 100 yards away; a gentle stream flows from it, and the water seems beautiful and good. After several cases of fever had occurred in this row, and cases were still occurring, I discovered, to my horror, that this drain was used as the source of water supply, and that typhoid germs were being supplied at one end of the drain and drinking water at the other. After the use of this was prohibited the cases gradually diminished, and the fever disappeared. When the new and plentiful supply of water is brought to this row, I shall be very much surprised if there is ever an epidemic of typhoid there.

District C.—Here there was not much matter of interest beyond the fact that there is not sufficient water-supply. The ground is flat, and drainage accordingly insufficient, and as a consequence cases are now and again occurring, and likely to continue so.

District D.—This brings me to the consideration of the last district where my cases occurred, and here there were peculiarities in the production of the fever of considerable interest. The houses are situated on the sides of a hill, and there is considerable facility for drainage. The water-supply is good, and plenty of it.

The first case that occurred was a girl who had been working at a district two miles away, and where the fever was very common. The girl came home to her parents every night, and never stayed at

night in the fever district. She took the fever first in the family, and was the first case in that district. The disease attacked several members of the family, but no one else in the row where she lived was attacked.

The house where the next case occurred was about 150 yards away, and it seemed very difficult to account for this case, as the house was particularly good and clean, with no apparent bad drainage. The mother of the girl whom I mentioned was first affected had been in the habit of visiting this house, and it seemed as if she had conveyed the poison, and thus the disease seemed in this case to have been caused by infection. It is difficult to prove this, almost impossible. From this house the fever spread to two different houses, the houses of sisters of the patient, and who had been engaged nursing her. The others on each side escaped. Why were they singled out thus? What was the connecting link between their seizure and their sister's? Did they, in visiting their sister, receive the fever directly from her, or from a typhoid stool, or from some fermenting impurity near the house? The former view seems to be the most probable, and seems to support Budd's theory of the origin of typhoid by contagion, though I believe, from the first case that occurred in this district, that it is possible that the fever may be originated by infection.

Treatment of Typhoid.—Different cases of this fever must be treated in different ways, according to the symptoms which are most developed, and according to the age and condition of the patient; but there are certain rules under which I should act in every case, if it were possible. Thus, in cases where I was certain the cause was bad drainage,—and the most of the cases, I am confident, are the result of this,—I would remove the patient to a place where there was no such evil, as I believe that the disease is aggravated as well as caused by the poison from this source, and I am sure that cases are longer in recovering where they continue in the locality of deficient sewerage arrangements. In my practice, where the people are of the lower classes, this is unfortunately not possible. The same dictum must be applied to the desirability of having a large, well-ventilated room with two beds in it, one to be used at night and the other by day, and having the patient carefully sponged once or twice a day. These things must be denied to the poor classes, however important they are. Complete disinfection of the stools is most important. What we have to treat in typhoid fever is an ulcer (or ulcers) of the intestines, which is accompanied by febrile symptoms more or less severe, almost invariably by diarrhoea, and sometimes by hæmorrhage. If we have an ulcer of the stomach, we endeavour to rest that organ by keeping the patient in bed, and supplying the organ, with its abraded wall, with food which will irritate it as little as possible. If we give solid food we have great pain and vomiting, after which there is a considerable amount of relief in most cases. If we give milk and

other bland nourishment there is very little pain and little or no vomiting, and the patient is receiving nourishment without much injury to the surface of the ulcer, and which we expect in process of time, as a result, will heal. The same reasoning is applicable to the typhoid ulcer, and I have had occasion frequently to see aggravation of the fever, or a relapse from recovery, from some slight departure from the rule to give nothing but milk or beef-tea during the process of the fever and for some time after, whatever medicines are given, and they can only be given to treat symptoms, and are of second-rate importance to the dietary. The patient very soon tires of milk, but it may be judiciously mixed with lime-water, especially where there is diarrhoea, with potash, soda, and Carrara waters. If ice is to be had, a small piece put into the milk is very grateful. When there is not much diarrhoea, beef-tea may also be given, and when there is exhaustion both beef-tea and stimulants may have to be added; but milk I have always found to be the very best diet. Symptoms have to be treated by the ordinary remedies, quinine or salicin for high temperatures; cold sponging I believe to be better than either. In cases where it seemed that the ulceration was slow in healing, I have tried turpentine internally, but have not seen benefit always resulting. I have treated a large number of cases now according to the above plan, and have been fortunate in not losing two per cent. of the cases thus treated, and many were of a very severe type.

ARTICLE VII.—*Practical Observations on some of the more Common Diseases of Early Life.* By CHARLES BELL, M.D., Lecturer on Midwifery and the Diseases of Women and Children, Fellow of the Royal College of Physicians, Edinburgh, etc.

(Continued from page 220, vol. xxv.)

INWARD FITS.

THIS is a common disease in infants within a few months after their birth. The child lies as if asleep, but the eyelids are partially open and have a twinkling motion, the eyes are turned up so as to show the white, the muscles of the face and lips have a tremulous movement, producing the effect as if the child were smiling—a circumstance which has given rise to the beautiful idea that angels are whispering to it, which has been finely illustrated by Moore in his *Irish Melodies*, under the name of “The Angel’s Whisper.” As the disease increases the breathing is occasionally interrupted, the features become pinched, and a livid circle forms round the mouth and eyes. There is restlessness and starting during sleep, and the child is disturbed by the slightest noise, and sighs and brings up wind, after which it relapses into a

drowsy state. In simple and mild cases the attacks generally disappear as the child's strength improves; but if it is improperly treated, the drowsy state increases, and a sort of thrush appears, accompanied by feverishness, sour vomiting, watery stools, gripes, which may terminate in regular convulsions.

Dr Armstrong has divided this disease into four stages, viz., 1st, inward fits; 2d, fever and thrush; 3d, sour vomiting; 4th, convulsions. Underwood did not consider it worthy of being called a disease, and that he knew no complaint which ought to be called "*inward fits*:" the symptoms described above were worthy of attention only from the risk that they might pass insidiously into regular convulsions,—an amply sufficient reason for their being carefully attended to, and means taken for their being removed.

The incipient stage which occasioned the name may occur at very early periods, and the earlier it does so there is the greater danger to be apprehended. Nurses often use the terms on insufficient grounds, and in consequence the mother is apt to become needlessly alarmed, and to have recourse to very improper medicines, such as Dalby's carminative, Godfrey's drops, Soot drops, etc., which are liable to produce serious results.¹

It has been connected with spasm of glottis,² with acute asthma,³ the peculiar species of convulsions,⁴ cerebral croup,⁵ laryngitis stridulus,⁶ thymus asthma or spasmodic croup,⁷ by different authors.

Treatment.—It is clear that the symptoms which have just been described are the result of something irritating the bowels, and that a dose of magnesia will in general be sufficient to remove it. Should this not be the case, it may be necessary to attend to the state of health of the nurse, and to give the child the benefit of change of air.

EPILEPSY.

This distressing form of fits is distinctly of two kinds, although the symptoms are exactly the same during the attack. The one ceases at puberty, while the other continues throughout life, and the symptoms often become more severe as age advances. The more prominent form of the disease is considered by many authors to be hereditary, and it has been calculated that at least eleven per cent. may be attributed to that cause. It has been asserted by Dr West that a large proportion of epileptic patients are of feeble intellect, and their temper is frequently so variable and irritable that they are almost insane, that the prospect of the disease disappearing at puberty is extremely uncertain, and that the establishment of a new function is more likely to prove

¹ Dr John Clarke, *op. cit.*, p. 182, 10th edition; Charles Clarke's Commentaries, p. 86; West, *op. cit.*, p. 38; Dr Hugh Lee, and Dr Henderson.

² Sir Henry Marsh.

³ Dr Millar.

⁴ Dr John Clarke.

⁵ Dr Petry.

⁶ Mason Good.

⁷ Kopp.

an additional cause of disturbance to the nervous system; yet if epileptic fits come on at the period of teething there is a chance of these disappearing when that process is completed. This author very inconsistently states in another place that there is a greater chance of epilepsy disappearing between the fourth and sixth year than at any other period, and if it makes its appearance "during the changes ushered in at puberty we may look forward with some degree of cheerfulness to the time when all those changes shall have been completed." Dr Lange states that in the course of thirteen years 12,769 children died of this disease, and that he attributed the great mortality to the effeminate education so common in all classes. This opinion is not supported by recent observation.

Cause.—The most common exciting causes are fear, sympathy from seeing others affected, peculiar perfumes, noises, loaded state of the bowels, certain bright colours—an example of which is given by Dr Haynes,¹ who states that a child was seized with a fit on looking at a bright red colour. It is probable that in this case the fit was already excited, and the circumstance of the red colour having attracted the attention of the child led to its getting the blame. The hereditary influence is the most serious, as it leads to the most hopeless form of the disease.

Symptoms.—This form of convulsion is peculiar in the suddenness of its attack and violence of the spasmodic action, especially in the jaws, by which the tongue is frequently seriously injured, and also by the foaming at the mouth. Sometimes the fit commences with a scream, which is soon followed by foaming at the mouth and insensibility. After the fit the patient generally falls into a profound sleep, on waking from which he is quite unconscious of the attack he has had, and complains of headache and stiffness.

Prognosis.—This will be regulated very much by the cause and the period at which the disease commences. If it seems to arise from teething, it is possible that the fits may cease when that process is completed; if not, they may entirely disappear at puberty, unless there is a hereditary tendency to the disease, in which case the probability of cure is very uncertain. If the fits are rare, although severe, the case is more favourable than if these were frequent and mild.

Treatment.—The first object in the treatment of epilepsy is to protect the tongue from injury. This is best done by inserting a piece of cork wrapped in a handkerchief between the teeth, and preventing the patient from injuring himself during the spasms, which must be done with the utmost gentleness, otherwise the muscles may be severely strained. Our next duty is to endeavour to overcome the spasms. This may be done by enemata containing turpentine, or a full dose of castor-oil, according to the age, or

¹ *Op. cit.*, p. 227.

by the use of chloroform. As soon as the patient can swallow a dose of calomel should be given, followed in course of a few hours either by castor-oil or the essence of senna, or in a young child by fluid magnesia. As prophylactics a variety of medicines have been suggested, such as the oxide of zinc, chalybeates; but Dr West puts little faith in the use of the zinc, as it has proved utterly *powerless* in his hands.¹ The great object in our treatment should be to improve the general health, which will be effected most likely by change of air, light nourishing diet, regulating the bowels, and guarding against the exciting cause, and watching the approach of the attack, which in many instances may be warded off by antispasmodics, such as the tinct. of valerian or the bromide of potassium. Electricity has been found useful in diminishing the number of fits, but it has no effect of curing the disease. Indeed, in the opinion of Dr West there is no specific for the disease. He further asserts that, while in the adult the attack seldom comes on when the patient is occupied in hazardous trade, children are equally exempt from it during their amusements. It comes on more frequently when the person is sitting idle or overcome with fatigue.

Exercise has been found of great use in warding off the disease, a circumstance which leads to gymnastics being introduced into the hospital of Beülis. The employments, therefore, which are best suited for epileptic patients are such as engage the attention as well as occupy the hands. Upon this principle, when the articulation becomes impaired by the disease, which occasionally happens, the child should be induced to repeat some simple chant; and when the gait becomes awkward, it may be improved by the patient being made to go through some gentle exercise to music.

CHOREA, OR ST VITUS' DANCE.

This disease rarely appears in early infancy; it occurs most frequently between the period of second dentition and puberty. Dr West met with only 192 out of 51,000 children under twelve years of age, who were sent into the Hospital, and the largest proportion of the cases were in girls. When it occurs after puberty it is generally the result of some internal inflammation, such as pericarditis or endocarditis, and it seems to have an intimate connexion with the rheumatic diathesis.²

Cause.—When it occurs in early life it comes on gradually, and seems to be the result of impaired general health, indigestion, constipation, or as a sequence to an attack of rheumatism, or of some of the eruptive fevers; on other occasions it comes on suddenly after a fright, an injury, and in short it seems to arise from whatever enfeebles the general health.

¹ *Lectures on Diseases of Children*, p. 214.

² West, *op. cit.*, p. 221; *Practical Manual of the Diseases of Children*, by Ellis, p. 117; Hillin, *Diseases of Children*, p. 225.

Symptoms. — It may commence by a certain irritability of temper, which may be followed by awkward fidgety movements, which the patient cannot control. These movements may be confined at first to one side, affecting the arm, then the leg, inducing stumbling in walking. The muscles of the face participate in the irregular movements, producing, in some cases, the most painful expressions and grimaces. In some severe cases the whole muscles of the body become affected, giving rise to such a variety of movements that it is impossible to describe them. They are liable to become aggravated by excitement of any kind; but sometimes, if the attention is fixed on any particular object, they may be quieted for a time, and they generally cease during sleep. In some instances they may be exceeding gentle, consisting merely of twitching, which prevents the patient from holding anything steadily in the hand; on other occasions the movements affect only some of the muscles of the face, giving a peculiar twitching especially of the nostrils; or there may be difficulty in showing the tongue, and the act of deglutition is performed with a kind of gulp. In the severe forms of the disease the expression of the patient becomes, in some instances, quite idiotic.

Although in general it is only the external muscles that are affected, it may happen that the heart itself becomes affected, and its rhythm is seriously influenced. It is remarkable, however, that the disease never proves fatal, and when it does so it seems to be the consequence of muscular exhaustion, and not from any morbid condition which is observable after death, although occasionally the spinal cord is found to be congested.¹

Treatment.—This must be regulated very much by the general condition of the patient and the severity of the symptoms. In the milder form a combination of gentle aperients and tonics will be found the most beneficial, as there is generally a great amount of debility. The best tonics are chalybeates, and if they fail, recourse may be had to the oxide of zinc and the liquor arsenicalis. As in every other nervous ailment, the bromide of potassium will be most beneficial during the attack. Tepid sea baths may prove useful, and sulphur baths have been strongly recommended by Baudeloque. They are readily formed by dissolving six and a half ounces of the sulphate of potash in water heated to 90°, and the patient should remain an hour in the bath daily.² This treatment has also been recommended by See, who advises its being persevered in for twenty-two days. It is stated that it proved beneficial in fifty out of fifty-seven cases. The great drawback to the bath is its offensive smell, which deters children from going into it. Gymnastics moderately employed are advisable. They should, if possible, be regulated by music, and they should not be continued so long at a time as to produce fatigue. The sort of exercise recommended by See consisted of standing erect and bending and extending the

¹ Dr Ellis's *Practical Manual*, p. 119.

² Baudeloque, p. 213.

arms ; then doing the same with the knees ; after which walking, running, and even leaping may be practised. This author put so much value on such exercises that he asserts that they are sufficient alone to effect a cure. Along with gentle and regular exercise, pure country air and a moderate allowance of wine should be indulged in.

In the more aggravated form of the disease it may be necessary to confine the patient to bed, and have him carefully watched lest he should injure himself by the violent actions. Dr West states that "there are two remedies which seem to have especial influence in controlling the violence of the choreic movements—antimony is one, and belladonna the other." If there is much fever, small doses of calomel and James's powder will be useful in subduing the fever and the violent movements, or large doses of the bromide of potassium may be had recourse to, along with warm baths ; nauseating doses of antimony may be employed. When belladonna is given it ought to be in small doses every four or six hours, and continued for a fortnight, as its good effects are not always immediate.

GRIPES OR TORMINA.

Gripes are of common occurrence in young infants, and they are obviously the result of indigestion and acidity, and they are indicated by violent screaming and the drawing the limbs towards the stomach. The child refuses to take the breast in the ordinary way, but will do so if applied in the upright posture. If the tormina is not soon relieved the skin becomes hot and the face flushed. It is generally supposed to be the result of cold or light and damp clothing, but it much more frequently arises from improper food, or from the agitation of the nurse ; it therefore often follows a fit of passion on her part.

Treatment.—Antacid and antispasmodic medicines are the proper remedies in this case. The attack generally subsides on the child passing wind upwards. A dose of magnesia should always be given in order to remove any acidity which may be in the stomach and bowels.

GANGRÆNA ORIS, OR STOMATITIS GANGRÆNOSA.

This disease has been generally considered as an idiopathic affection, but Underwood believed it to be sympathetic, depending on a disordered state of the stomach and bowels. It occurs generally between the second and ninth year, but never later in life, unless from infection. It begins with remarkable tenderness of the mucous membrane lining the mouth, and a spongy state of the gums. This condition is soon followed by aphthous sores on the tongue, gums, and lips, which soon assume a dark colour if not relieved. These sores sometimes extend to the uvula and tonsils. The cheeks swell and become excessively tender to the touch. The

teeth become covered with sordes, and the breath most offensive. It is very infectious, and is sometimes communicated to adults. As the disease advances the submaxillary glands inflame and swell and there is a profuse secretion of saliva. These symptoms are attended with great weakness and loss of appetite. Notwithstanding it is not always a fatal disease, although extensive sloughing of the gums and lips sometimes takes place.

Cause.—It is a blood disease, resulting from an impaired state of the system, consequent, in many instances, on some febrile attack, such as measles, scarlatina, typhus fever, scurvy,¹ etc.

Treatment.—Strong caustic applications have been recommended, but it is very questionable treatment. The great object should be to improve the system by nourishing diet and chalybeates, and bathing the parts frequently with a solution of Condyl's fluid in proportion of one part to eight of water. The chlorate of potash may also be given with advantage along with pure air.

VESICULAR STOMATITIS OR THRUSH.

This is a common disease in infancy, more especially in those who are fed artificially. It is always attended by ulceration, which sometimes extends from the mucous membrane of the mouth to the cesophagus and trachea, hence its name of ulcerous stomatitis. In general the ulcer appears on the tongue, the roof of the mouth, or inside of the cheeks, and is covered with a white scale or crust resembling a slough, and is surrounded by a red circle. There may be only one white spot at first, but soon others appear, until, in some cases, the whole alimentary canal is more or less involved. The false membranes or crusts occasionally fall off, and if they are swallowed they produce great irritation of the stomach and bowels. There may be considerable fever, and the mouth may become so hot and tender that the child cannot suck. The bowels are sometimes constipated, at other times they are relaxed, and the evacuations are very offensive. The child becomes irritable and peevish, which may be accounted for by the pain of the ulcerations and the want of nourishment. Although this disease is principally met with in children, it is sometimes found in old people, proving that it depends on a debilitated state of the system. It may also depend on the habit and constitution, as it occurs in every child in certain families, quite irrespective of the kind of nourishment. It was formerly considered a mild and harmless ailment, and one which was rather desired within the month, for if it did not come on then it was sure to appear at a more advanced period, when it was likely to be more severe.

It is a much milder ailment in this country than on the Continent, more especially in France, where it often occurs as an epidemic.

¹ *Vide* an excellent paper by Dr Ritchie, *Transactions of the Edinburgh Obstetrical Society*, vol. ii. p. 418.

and is known by the name of "muguet" or "millet." Churchill denies the identity of this disease and thrush, and states that the white appearance of the mouth in this disease is an abnormal secretion or growth on the mucous membrane, while in thrush it consists of "a vesicle or pustule formed beneath the epithelium."¹ There is much diversity of opinion in regard to the true nature of the false membrane. Billard² considered that it was a concretion of mucus; Bouchut that it was "composed of a mass of cryptogamic plants;"³ D. Berg⁴ asserts that it is a parasitic disease, and "the white coating of the epithelium thickened by the swelling of its constituent cells, and from this epithelium there springs a parasitic fungus." In his opinion "the aphthous parasite can propagate itself in appropriate menstrua:" hence "the disease may be conveyed from one child to another," either through the atmosphere "by the sporules, or fragments of sporules, in a dried state floating in the atmosphere, but that it is more frequently propagated by the bottle from which children having the thrush have been fed, or by the nipple, especially if two children are suckled by one nurse."⁵

Cause.—Although there is a considerable difference in the character of the false membrane of the thrush and muguet, there is little or none in their origin or cause, as they both proceed from impure air and unsuitable food, and there is strong reason for supposing that they are infectious, and that they may even be communicated to the nurse by excoriating the nipples.

Prognosis.—So long as the scabs retain their white colour and circular form, and show no tendency to extend, at the same time that the strength of the child keeps up, there is little cause to apprehend danger; but when they take on an unhealthy action and spread rapidly, there is cause to fear bad consequences, especially if hoarseness and spasmodic breathing come on, accompanied with suffocating cough.

Treatment.—The great object in the treatment of this disease is as soon as possible to remove the cause, which, when not epidemic, is improper food or close and impure atmosphere. If the child is still sucking, another nurse must be got, and the child must be removed to a purer atmosphere; mild aperients consisting of rhubarb and potash, or the solution of magnesia, should be given so as to act moderately on the bowels. The mouth should be bathed with a solution of Gandy's fluid—a few drops of which may occasionally be allowed to be swallowed. In addition to which steel wine should be given every three hours, or a few drops of the muriate tincture of iron, according to the age of the child, in water.

(To be continued.)

¹ *Op. cit.*, p. 514.

³ Churchill, p. 517.

⁵ Churchill, p. 520.

² *The Diseases of Infants*, p. 164.

⁴ Churchill, p. 518.

ARTICLE VIII.—*Ectopia Renalis*. By W. MARSDEN, A.M., M.D.,
Quebec.

MOVABLE, migratory, loose, or floating kidneys, are all terms which may be appropriately applied to the species of organic lesion which forms the subject of this short paper. I apprehend that this ectopia is of much more frequent occurrence than is generally suspected or known, and my object in bringing it before this association is not intended to add anything new to our clinical pathological literature, but to draw the attention of my professional brethren to the fact of its obscurity and probable frequency. Although I have been in an active medical practice for upwards of fifty years, I have had only one ascertained case of this luxation, but I am justified by several writers in assuming both its obscurity and its frequency.

Elstein¹ says many cases of long-continued abdominal pains and obscure disturbances in the lower part of the abdomen are primarily due to movable kidneys, which will escape notice so long as an objective examination is not made.

Rayer seems to have been the first writer to give a comprehensive clinical history of movable kidney which has had any influence on medical practice, and Trousseau has followed in his wake, making it the subject of one of his learned and instructive lectures.

Dr Walther of Dresden examined a great number of persons, and found movable kidneys in many in whom the anomaly caused no symptoms whatever, so that the patients were entirely ignorant of its existence. An accurate estimate of the frequency of this lesion is consequently impossible, since, as a rule, only those cases come to the physician's knowledge in which the anomaly causes troublesome symptoms, or in which the mobility of the kidney is accidentally discovered during an examination of the abdomen undertaken for some other reason. Movable kidney may be either congenital or acquired.

Rayer states that the female sex is peculiarly predisposed to this anomaly, and Elstein confirms the fact, having collected reports of 96 cases, of which 82 occurred in females and only 14 in males. Dr Fritz also collected 35 cases, 30 of which were females and 5 males.

In infancy and old age movable kidneys are very rarely met with, as most of the cases happen between the ages of 25 and 40 years. In the great majority of cases the right kidney is the affected one. In 91 cases Elstein found the right kidney affected 65 times, the left 14 times, and both kidneys 12 times.

Some writers attribute this ectopia to tight lacing. Cruveillier, noticing the predilection for the right kidney in women who

¹ Ziemssen's *Cyclopaedia of Medicine*, vol. xv. p. 764. *

compressed the liver by tight lacing, found the right kidney sometimes in the iliac fossa, occasionally in front of the vertebral column, and occasionally on a level with the mesentery, in which it was embedded. The less frequent displacement of the left kidney is, however, more due to the fact, that the left hypochondrium (which is occupied by the spleen and the fundus of the stomach) bears pressure with greater impunity. Notwithstanding the greater predisposition to mobility of the kidney in women as compared with men, tight lacing seems to have little to do as a factor, since this anomaly is relatively least frequent among ladies, and women belonging to the wealthier classes, by whom corsets are most commonly worn. The chief exciting cause is, repeated pregnancies and deliveries, and a hyperæmic swelling of the kidneys during the menstrual period, at which time females labouring under this lesion suffer most.

Ectopia renalis takes place slowly and gradually, even in traumatic cases, and is congenital as well as acquired. Blows, falls, prolonged fatigue, heavy labour, great exertions, contusions, etc., are among the exciting causes of movable kidney. My own solitary case to which I have alluded was traumatic.

As to the symptoms of this ectopia, Dr Walther's researches show that there are none. Movable kidneys are almost always a post mortem discovery, but are never fatal; and Trousseau¹ says it is an infirmity which is not serious, and which we can always hope to alleviate, but hardly ever hope to cure.

Post-mortem examinations, however, show that spontaneous cures do sometimes occur as the results of peritoneal inflammation, by which the kidney is either replaced or forms a new attachment by inflammatory perinephritic adhesions. Dr Bequet mentions a case where, on one occasion, renal fluxion became excessive, and partial peritonitis arose, followed by the formation of false membranes, and resulted in the displaced kidney ceasing to be movable and becoming definitely fixed in an abnormal position. Dr Guéneau de Mussy also endorses this opinion, having met with a similar case.

Movable kidneys have not unfrequently been mistaken by physicians of undoubted skill and scientific attainments for other tumours, and cases have occurred where operations have been undertaken for their removal resulting fatally. They have been mistaken for tumour of the liver, gall-bladder, spleen, mesentery, intestine, or for fibrous tumour of the ovary. Trousseau² mentions a case where "more than ten physicians were consulted, and all, with one exception, were of opinion that it was malignant tumour of the liver. The physician who dissented (a homœopath) pronounced it a tumour of the uterus, and treated it accordingly. He treated metritis which really did exist, but he cured neither it nor the tumour."

¹ Trousseau's Lectures.

² *Idem*.

A case taken from the London *Lancet* is reported in the *Edinburgh Medical and Surgical Journal*, vol. x., page 952, where a kidney lying in the abdomen in front of the intestines was mistaken for an ovarian tumour and operated on, resulting in the death of the woman within three days.

Fearful of being tedious in my details, I will now refer to my own case. It was beyond doubt the result of repeated falls. The lady was a bold and fearless horsewoman, rode a great deal on horseback, and had several very severe falls when riding.

She was 32 years of age, about five feet five inches high, well-formed, good bust, constitutionally sound and healthy, and came from a very healthy stock. Several months previous to consulting me she had for some time suffered a great deal periodically with dyspeptic symptoms, hysteria, and hypochondriasis. Her first severe fall from her horse (by being run against by a carriage) was about eight years since.

When first consulted in this case, on the 4th of September 1878, I found her labouring under the same set of symptoms as those just mentioned, with the addition of an unpleasant and painful sensation in the abdomen, with great flatulence and colicky pains. I ordered warm poultices, warm bath, and aperients (which were indicated), with perfect rest, to which the distressing symptoms yielded in a few hours.

On the 19th of December I was again called in, and witnessed a renewal of all the former symptoms, and was told that the attacks had been renewed periodically since my former visit, but in addition, that a small round hard tumour had appeared in the right side, about the size of a pigeon's egg. This I examined and found as described, rather deep seated, not very movable, nor yet very painful. Its character and situation both perplexed me, as it was too high up for ovarian tumour (which was my first thought), when its hardness and situation caused me to suspect scirrhus of the intestine or mesentery, but I treated it as on the former occasion and with like results.

On the 20th of January 1879 I was again sent for, and my patient then stated that the pain was not so severe as on the former or last occasion, but that the tumour was now as large as a goose's egg! On examination I found that her statement was perfectly correct, and that the tumour had grown in only six weeks from the size of a small pigeon's egg to that of a large goose's egg. This new and unusual development surprised me more than ever, being a condition that I had never witnessed before, and I at once proposed a consultation, to which the lady assented. I called in Drs Jackson and Lemieux, respectively professors of midwifery and surgery at the Laval University, and Dr Rowland, when Dr Jackson, who had seen a similar case in Edinburgh upwards of forty years before, at once pronounced it a case of "loose kidney."

The kidney, for such it evidently was, and not a tumour, was

exceedingly movable, and the displacement great. There must have been great extension and stretching of the cellulo-adipose tissue, nerves, and vessels, as it could be freely moved and radiated in every direction, down into the iliac fossa, under the navel and ribs, and beyond the median line. The outline or form of the kidney was not so distinguishable at this time as subsequently, from being tumefied and congested; but the fact of a migratory kidney was unmistakable. By relaxing the abdominal muscles we could feel behind and beneath the kidney, while by pressing deep down into the lumbar region of the same side, an unquestionable void was felt where the kidney ought to have been.

One remarkable feature of this case, which may have been somewhat exceptional, was the comparatively little pain produced by examining and handling the kidney, although Dr Walther says that the kidneys are movable in a considerable number of persons who suffer in no degree whatever therefrom, and give no thought to the peculiarity, and are even ignorant that they have a movable kidney. In such cases, however, the displacement could not have been as extensive as in mine. An analysis of the urine showed nothing abnormal, and this is said to be usually so, even where there may be a large amount of pain.

The treatment consists in reducing the dislocated kidney, and thereby relieving the symptoms produced by it,¹ and particularly in guarding against manifestations of incarceration. The unpleasant as well as painful sensations disappear at once when the organ has been successfully replaced. This, by placing the patient on her back and manipulating carefully, is easily done. In fact, it will almost fall back into its normal position itself; but, should it not, light and gentle pressure upon the kidney directed towards the lumbar region will successfully replace it. The after-treatment consists of a bandage and pad properly adjusted. Let the whole abdomen be surrounded by a *strong bandage*, and under it, at a point corresponding with the tumour, apply a well-lined or stuffed concave pad, in order to prevent the kidney from again becoming displaced; and let it be worn constantly, whether lying, sitting, or walking.

Guéneau de Mussy recommends a pad shaped like a square, so applied that the lower branch will keep the kidney from falling forwards, and the vertical branch will keep it from slipping inward or outward. Some persons recommend an elastic bandage similar to the elastic stockings worn for varicose veins in the legs, but my own experience is in favour of a stronger and more resisting and carefully adjusted bandage, as displacement very easily occurs from bending, turning, or straining of the body, which an elastic bandage is unable to control. But despite all these precautions, displacement will take place occasionally, and does so in my case, especially during the menstrual period, on which

¹ Elstein.

account I enjoin perfect rest in the dorsal posture during all that period. The general health must be attended to, and especially the state of the secretions. If the patient is reduced or emaciated, or suffering from anæmia, supporting diet, with iron and tonics, are indicated. Flemming¹ asserts that mobility of the kidney has been cured by a tonic treatment continued for a long time.

I have stated my conviction that this organic lesion occurs much more frequently than is generally supposed; and I think I am justified in that conclusion, as Rollet² says that among 5500 cases in Oppolzer's clinic there were 22 accurately determined cases of movable kidneys, or 1 in 250. Again, at the Charité in Berlin, in 3658 autopsies there were 5 cases, or 1 in 750. Now, whatever doubts there may be as to the accuracy of the former statement (as doubts have been expressed), there can be none in relation to the latter, as the post-mortem examination settles that point. It is stated, on what seems to be good authority, that loose kidneys are of much more frequent occurrence in some countries than in others, and particularly in Poland and the German States. It must be evident, however, that the disease is a very obscure one, and one not likely to be discovered by a person whose attention has not already been specially called to such cases. In my case, had I known what I now do, I should likely have correctly diagnosed loose kidney when the tumour—or rather the supposed tumour—was only the size of a pigeon's egg, and was breaking away from its adipose bedding and attachments, and forcing its way, unsuspected and unchecked, through the peritoneum, and I should probably have arrested its further displacement and have saved my patient much inconvenience and suffering.

ARTICLE IX.—*Bladder-Drainage*. By JOHN CHIENE, [Surgeon, Edinburgh Royal Infirmary.

(Read before the Medico-Chirurgical Society of Edinburgh, November 3, 1880.)

IN August 1876 a case of perineal fistula was admitted into the clinical wards in the Royal Infirmary. A large opening, the result of sloughing, had formed in the floor of the urethra behind the scrotum, through which all the urine passed at each act of micturition. It was evident that a plastic operation was necessary. From previous experience in such cases, the great delay in healing seemed to me to be due to the difficulty experienced in keeping the wound dry. If a catheter is tied in the usual way, and a plug worn, which the patient removes at each call to micturate, the result is that on the day following the operation, during micturition, the urine passing along the sides of the catheter reaches the wound, and interferes with, or altogether prevents union. Even if no plug

¹ *British Medical Journal*, August, 1869.

² Ebstein.

is used, the urine being allowed to drip into a basin between the patient's legs, the same result follows, to say nothing of the damp, uncomfortable condition of the bed.

The problem seemed to be, How can the wound be kept dry for some time, and thus placed in favourable conditions for healing? The method adopted, after various experiments and trials, was as follows:—A gum-elastic catheter is introduced and fixed to the penis with sticking-plaster. Care is taken that the eye of the instrument is just within the neck of the bladder. To this catheter an indiarubber tube is fixed, of sufficient length to reach without being strained over the side of the bed to the floor. It then passes into a bottle. The bottle and tube are filled with carbolized water before attaching the apparatus to the catheter. Care is taken that no air can get in at any of the joints. It is well to introduce a piece of glass tubing at a convenient part for observing the direction of the flow. In order to keep the indiarubber tube steady in the bottle a piece of glass tubing is attached to its extremity. If the glass tube extends beyond the neck of the bottle, any folding of the indiarubber tube at this point will be prevented. It will be evident that a siphon action is in this way established, with a suction power the strength of which depends on the height of the column of water, and which will draw the urine into the eye of the catheter as it passes drop by drop from the openings of the ureters into the bladder, and a constant slow current of water will pass along the tube into the bottle. The bottle is allowed to overflow into a basin, which, as it fills, can be emptied by the nurse without any risk of displacing the apparatus. The bladder is kept constantly empty, with the exception of two tiny streams of urine from the ureters to the eye of the catheter. Care must be taken not to have too great a fall, or the suction of a piece of mucous membrane into the eye of the catheter will cause uneasiness and plug the catheter. The height of the hospital bed is generally sufficient, and in some cases even a less height is all that is required.

It will be evident to the experimental therapist who may desire to study the action of diuretics that by this apparatus much will be learned. The bottle being graduated, the rapidity of action can be easily studied. Since using the instrument on the human subject I have learned that Professor Goltz of Strasbourg has used a similar apparatus in an experimental research requiring an accurate estimate of the exact amount of urine secreted in a given time. In the first case the apparatus did not act perfectly, and on the sixth day the wound became wet with urine. The result was only an improvement. Still, the success was so marked that I tried it in the following year in another case, in which the floor of the urethra was destroyed for an inch and half by injury. The result in this case was a complete success. After the plastic operation the apparatus was applied, and the wound kept perfectly dry until it was soundly healed.

Since 1877 this method has been used in a case of recto-urethral fistula with much advantage; in 1879, in four cases of chronic persistent perineal fistulae (which had resisted the usual means of treatment). In three of these cases a stricture, in the fourth a perineal abscess, the result of cold, started the condition. In all a permanent cure resulted. In these cases the instrument was kept in continuously for periods varying from a week to a fortnight. It was occasionally removed in order to readjust it. During the time it was removed for cleaning, the patient was instructed not to make his water. I have never found any bad results whatever follow its use. It is also of value in hastening healing, and keeping the patient dry and comfortable during the healing of the wound after external division of a stricture.

Let me, however, more particularly direct attention to bladder-drainage in chronic cystitis. It will, I think, take a most important place in the treatment of that troublesome and common affection. The two great symptoms are frequency of micturition ("irritable bladder"), and excessive quantities of mucus in the urine ("catarrh of the bladder"). The first symptom is at once relieved by the use of the instrument, and in some cases its use even only during the night gives the patient unspeakable comfort, but in the majority of cases it is best kept in the bladder continuously. The difficulty is the choking of the instrument with mucus; this will be prevented by having a double eye in the catheter, and by raising the bottle night and morning in order to make a back-flow, which clears the instrument. The patient can very soon tell when the flow ceases, and the bottle can then be raised slightly above the level of the patient. At once the plug of mucus is displaced. It is very interesting to observe the effect of rest to the bladder as indicated by the decrease in the quantity of mucus. In one case of perineal fistula, complicated with chronic cystitis, this improvement was very marked. The systole and diastole of the bladder are excessively increased in irritable bladder. No heart would stand such an increase in its pulsations. This, in my opinion, is one of the reasons why chronic cystitis is so intractable, and any means by which we can prevent the periodic rise and fall of the bladder, the incessant unrest of the organ, will always be of the greatest value in relieving inflammation of the viscus. For its value in chronic cystitis alone I would be inclined to recommend a careful trial of bladder-drainage. By some means or other let it be carried out; the method matters not. What is important is to come to a conclusion as to the value of the principle involved. Its main value in chronic cystitis, in my opinion, is to give the bladder rest. It acts as a drainage-tube in a wound or in an abscess cavity. It has, however, a value in urethral fistulae; in those requiring plastic operations it keeps the wound dry and allows speedy union to take place; in those requiring only that the urine which is abnormally passing along the fistulae and keeping them open

should be prevented from so doing, by being drained off immediately on its entrance into the bladder. *To give the bladder rest and to keep the urethra dry*, I know no better means than that which I now advocate. I am not aware that the idea of keeping up a constant suction power which draws off the urine as it drops into the bladder has been previously recommended in surgical practice. It is certainly a very different thing from the use of the catheter tied in and used in the ordinary way. That the means recommended are simple is self-evident; they can be applied by any one. That no harm is done to the patient is the result of my experience; that all operations on the urethra are treated more certainly by the use of the apparatus, and that it is of great use in many cases of chronic cystitis, relieving the symptoms in all, and giving permanent relief in others. That the symptoms of chronic catarrh are in some cases very intractable is evident, when we remember that chronic cystitis has been treated by the lithotomy incision in order simply to rest the bladder. Such are the reasons why I have introduced this means of treatment to the notice of the members of the Medical Chirurgical Society of Edinburgh.

Note.—In the discussion which followed the reading of the paper several points were raised to which it may be well to allude:—*1st*, Its use in catarrh of the female bladder. I have tried it, but found the siphon did not work. I believe, in consequence of the short urethra, air passed into the bladder and destroyed the siphon action. *2d*, The use of the red rubber catheter instead of the gum-elastic instrument. The red rubber catheter is not so easily fixed in position. *3d*, Its use in enlarged prostate and malignant disease of the prostate. I have not used it in these diseases. In one case of enlarged prostate I tried it, but it did not work efficiently; it might, however, be of use. For my own part, since Mr Jonathan Hutchinson directed my attention to the value of the red rubber catheter for drawing off the urine in prostatic cases the disease has been robbed of many of its terrors. *4th*, The danger of phosphatic deposit on the point of the catheter. This has never given me trouble. I suspect the reason is that the point of the instrument is not lying in urine, but is practically dry, the urine being drawn off into the eye of the instrument by the suction power, to which, I believe, the value of the instrument is to be attributed. *5th*, I have never had occasion to use it in rupture of the membranous urethra. In such a case I should most certainly try it. It would be of great assistance in preventing extravasation of urine. *6th*, The habitual night and morning raising of the bottle is, in the majority of cases of chronic cystitis, sufficient to keep the catheter clear of mucus and prevent plugging of the instrument. *7th*, How the catheter should be fixed to the penis. In tying in a flexible catheter, which adapts itself to the curves of the urethra, the best way, in my experience, is to fix a strip of sticking-plaster to the catheter firmly

with silk. This strip passes down either side of the penis. A piece of boracic lint is wound round the catheter at the meatus urinarius, under the strip of sticking-plaster. Another strip of sticking-plaster is wound round the penis, over the strip passing down the sides of the organ. After it has been round twice, the strip passing along the sides of the organ is turned back towards the point of the penis, and then two more turns are applied over it; it is then turned down again, and two more turns are applied. In this way the catheter is practically incorporated with the penis. I have always used common sticking-plaster; the rubber plaster might, however, I think, with advantage take its place.

ARTICLE X.—*The Examination of the Pulse.*¹ By BYROM BRAMWELL, M.D., F.R.C.P. (Edin.), Lecturer on the Principles and Practice of Medicine and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh, late Physician and Pathologist to the Newcastle-on-Tyne Infirmary, etc., etc.

By observing the characters of the pulse we obtain valuable information as to—(a) the condition of the heart and arterial system; (b) the condition of the general tone (the system as a whole); the frequency and strength of the pulse being chiefly valuable in this respect. The radial is the artery which is usually examined, and in speaking of *the pulse* the radial pulse is meant; but, in cases of cardiac and arterial disease, the condition of other vessels, the carotid, temporal, brachial, etc., should be noted.

Mode of Observing the Pulse.—We observe the characters of the radial pulse by—(a) the fingers (palpation); (b) the eye (inspection); (c) the sphygmograph.

Palpation, or the Examination of the Radial Artery by the Finger.—The correct observation of the exact characters of the pulse of the finger is a matter of extreme difficulty, and is only acquired by long practice. Since, however, it is *the* method which is universally available, the student should spare no pains to make himself master of it. Two fingers should be applied over the artery where it becomes superficial at the lower end of the radius, and the condition of the pulse noted as regards—(a) its frequency; (b) its rhythm; (c) its volume; (d) its compressibility or tension; (e) the special characters of each pulse-wave (celerity, diastole, etc.); (f) the condition of the arterial coats; (g) in cases of suspected aneurism or intra-thoracic tumour a comparison of the two radial pulses should be made.

¹ Being a lecture delivered in the Extra-Academical School of Medicine, Edinburgh.

PLATE I.

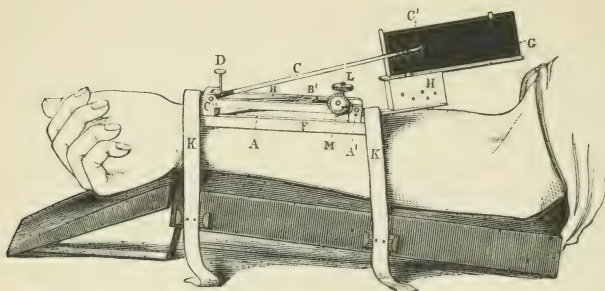


FIG. 1.

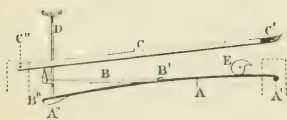


FIG. 2.

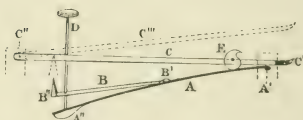


FIG. 3.

DESCRIPTION OF FIGURES.

FIG. 1. —The Sphygmograph *in situ*.—A, points to the steel spring; A', to its point of attachment to the framework; B, the first lever; B', its point of attachment to the steel spring A; C, the writing lever; C', its free end, which carries a pen; C'', its point of attachment to the framework; D, the screw for bringing the turned up free end of lever B in contact with lever C; G, the slide carrying the strip of smoked paper; H, the clockwork, which is wound up by a screw on the opposite side to that shown in the fig.; L, the screw for increasing the pressure; M, the dial on which the amount of pressure is indicated; K K, the straps by which the instrument is attached to the double inclined plane.

FIG. 2.—Scheme showing the essential parts of the instrument *when in working order*—*i.e.*, the turned up knife-edge B' of the short lever in contact with the writing lever C. Every movement of the steel spring, at A', *i.e.*, the artery, will in this position be communicated to the writing lever. The letters have the same significance as in Fig. 1.

N.B.—(The framework of the instrument has been removed.)

FIG. 3.—Scheme showing the essential parts of the instrument *after increase of the pressure*. The knife-edge B' of the short lever is no longer in contact with the writing lever, and the movements of the steel spring A', *i.e.*, the artery, are no longer communicated to it. In order to put the instrument into working order the knife-edge B' must be raised to the position indicated by the dotted lines. This is effected by means of the screw D.

Inspection of the Pulse.—In well-nourished individuals the radial pulse is hardly, if at all, visible when the circulation is tranquil. During cardiac excitement, and in emaciated subjects, the pulsation can often be distinctly seen. Pulsation is very visible in certain cases of disease, notably in atheroma, where the artery stands out as a rigid, tortuous cord, and in aortic regurgitation, where it is visible, jerking, collapsing, and tortuous (the locomotive pulse). In cases, too, of vaso-motor relaxation and excited action of the heart it may present some of these characters.

THE SPHYGMOGRAPH.

The exact characters of the pulse are graphically demonstrated by means of the sphygmograph. This instrument is chiefly valuable as an indicator of the general condition of the vascular system and the mode in which the circulation is being carried on, and as a means of studying the individual characters of each pulse-wave. It is comparatively useless and superfluous as a means of diagnosing individual cardiac lesions. Mahomed's modification of Marey's instrument is the best form.

Description of the Instrument.—The sphygmograph consists of—

1. A steel spring, A (see figs. 1, 2, and 3), which rests on the artery, and which moves up and down with each movement of the vessel.

One end of the spring, A' (see figs. 2 and 3), is so attached by a hinge to the framework of the instrument that vertical (up and down) movement is alone permitted. To the under surface of the free end of the spring an ivory pad, A'', is fixed. The ivory pad rests on the artery.

2. An arrangement of levers, by means of which the movements of the spring (*i.e.*, of the artery) are magnified and recorded on a piece of smoked paper.

There are two levers. The lower one, B, is so hinged by its proximal end, B', to the middle of the steel spring, that up and down movement is alone permitted. The free end of this lever, B'', is turned up at a right angle, and ends in a rounded or knife-shaped edge. Through the free extremity of this lever a screw, D, is passed. The point of the screw (by the force of gravity) is always in contact with the steel spring (*i.e.*, the artery). The lever, and therefore its knife-edge, is raised or lowered by turning the screw. The screw D and the lever B are practically the same; any movement of one (the steel spring being fixed) necessitates a corresponding movement of the other.

The second lever, C, is so fixed at its distal end, C'', to the framework of the instrument, that vertical movement is alone possible. The free end of this lever, C', carries a pen which records its movements on a strip of smoked paper propelled past it at a fixed rate by means of clockwork. In order that the movements of the steel spring (*i.e.*, the artery) may be communicated to the writing lever, the knife-edge of lever B must be in contact with lever C, as shown in figure 2. This is effected, as has been already stated, by alteration of the screw D.

3. An arrangement by which the amount of pressure excited by the steel spring on the artery can be regulated and measured. This is a most important part of the instrument, and is the modification made by Mahomed. It consists of a concentric, E, by

depression of which, as in fig. 3, any definite degree of pressure can be made upon the steel spring. The amount of pressure exerted is shown on a dial (M, in fig. 1) in ounces troy. The concentric is depressed by turning the screw L (see fig. 1).

4. A clockwork, H, which propels at a fixed rate a slide, G, to which a strip of smoked paper is attached.

5. A framework, F, to which the various parts of the instrument are fixed, and by means of which the instrument is fastened to the arm by straps, K, K.

Mode of taking a Sphygmographic Tracing.

1. *The Position of the Patient.*—The patient should be seated by the side of a low table, his arm resting on the pad (a double inclined plane) as represented in fig. 1, the fingers semiflexed into the palm.

If the fingers are quite extended, jerking movements of the tendons are apt to occur and interfere with the tracing. If the fingers are quite flexed, the rigidity of the tendons prevents the perfect application of the instrument.

The position should be as easy as possible, for it is essential that the arm be kept at perfect rest. The shirt sleeve should be turned up, and must be quite loose. If tight, it is apt to interfere with the circulation through the arm.

The position of the artery is then to be marked with ink. The ink line should be prolonged to the ball of the thumb, *i.e.*, below the instrument when it is applied. By this means we can, without removing the sphygmograph, ascertain if the ivory pad is still *in situ*, *i.e.*, exactly over the artery.

Before applying the sphygmograph the harmless nature of the procedure must be explained to the patient, for it is of the greatest importance to avoid anything which will excite or disturb the action of the heart. Some persons become considerably agitated, thinking that an operation is about to be performed. (One of my patients left the hospital rather than have the instrument applied.) In such cases a preliminary application to a fellow-patient or nurse is advisable.

The Application of the Instrument.—1. Screw up the clockwork, and see that the instrument is in working order. 2. Apply the ivory pad *accurately* over the *very centre* of that part of the artery which lies to the inner side of the styloid process of the radius. (At this point the artery is superficial, and rests upon bone. By compressing the vessel at this spot we can be quite certain that the entire pressure of the spring will be exerted upon it.) The instrument is then firmly strapped to the arm. The straps should be unyielding—not elastic. The slide carrying the strip of smoked paper is next to be fitted into the frame. Care must be taken that the paper is firmly and evenly stretched. This is best effected by first accurately fitting it and doubling its edges over the frame, then removing and smoking it over a piece of burning camphor, and finally fitting it to the frame again. The paper should not be over-smoked, and the point of the pen must not press too heavily against

it, or friction will prevent free movement, and the tracing will be imperfect.

The Adjustment of the Pen.—The point of the pen is then (by alteration of the position of the screw D, see fig. 3) to be brought level with the centre of the strip of smoked paper, as in figs. 1 and 2.

The Adjustment of the Pressure.—The pressure of the spring must be altered until the maximum amount of movement of the lever is obtained. Every alteration of the pressure necessitates a corresponding alteration of the screw D; otherwise the point of the pen is removed from its proper position. The clockwork, which has been previously wound up, is then to be set into motion, and a tracing taken. If the tracing is satisfactory, the name of the patient, the date, and the amount of spring pressure, should be inscribed upon it (by a needle or other fine-pointed instrument). The tracing is then rendered permanent by dipping it in a rapidly drying¹ varnish.

Where a comparison of tracings from different arteries (*i.e.*, the two radials) is required, (1) the greatest care must be taken that all the conditions (the position of the patient, amount of spring pressure, etc.) are the same; (2) the best obtainable tracing from each side must also be compared. In this case it may be necessary to have the pressure on the two sides different, but all the other conditions must be rigidly the same. A comparison of the *best attainable tracing* is of great importance where there are slight differences in the pulse-waves. In this connexion it is important to remember that where the heart's action becomes excited or accelerated as the result of mental or other causes the character of the tracing is materially modified (see figs. 4, 5, 6, and 7). *Tracings should always, so far as is possible, be made during tranquil action of the heart.*

Character of a good Tracing.—The best tracing is that which has the highest up stroke and the most pointed apex. In some pathological conditions—as, for example, in some aneurisms (see figs. 36 and 37), and in aortic stenosis (see fig. 13)—the apex is rounded; but this is so extremely rare that a tracing in which the apices are not pointed should always be regarded as imperfect until verified by repeated and careful readjustments of the instrument.

The chief points to be attended to in order to obtain a good tracing are—(1) the accurate adjustment of the ivory pad to the centre of the artery; (2) the proper regulation of the pressure. Figures 8 and 9 show tracings from the same pulse with different degrees of pressure.

Having described the mode of applying the instrument, the character of the normal and pathological pulse-tracings will now be considered.

Analysis of a Sphygmographic Tracing.—A tracing consists of a

¹ The varnish recommended by Mahomed is made by macerating an ounce of gum benzoin in five ounces of rectified spirit, with frequent agitations for two days, and then pouring off the clear liquor from the insoluble constituents of the gum.

number of curves, each of which represents one beat of the pulse. Each pulse-curve may be divided into (1) the line of ascent; (2) the apex; (3) the line of descent.

The Line of Ascent.—Up-stroke, or percussion stroke of Mahomed (*a* to *b*, see fig. 10), is in the normal pulse-tracing nearly vertical. It corresponds to the shock which is communicated to the whole arterial system by the sudden bursting open of the aortic valves. Its height varies with the amount of shock communicated to the arterial system, and depends upon—(1) the force with which the aortic valves are burst open, *i.e.* the force of the ventricular contraction less the resistance offered by the valve-cusps; (2) (to a less extent) the condition of the arterial walls (the degree of their elasticity) and the fulness of the arterial system.

The *direction of the line of ascent* (whether vertical or oblique) depends chiefly upon—(1) the condition of the aortic segments; (2) the suddenness of the ventricular contraction.

Where there is no obstruction to the free opening of the valve-cusps, and where the contraction of the ventricle is sudden, the line of ascent is *vertical*, as, for example, in most cases of aortic regurgitation (see figs. 11 and 12), and in cases of nervous palpitation (see figs. 5 and 7), etc., etc. *Vice versâ*, where there is stenosis of the aortic orifice, and where the ventricular contraction is slow and gradual, the line of ascent is oblique (see fig. 13). When, too, the primary impulse of the ventricle is lost in the sac of an aneurism (a fusiform dilatation into elastic walls for choice), the up-stroke is oblique (see figs. 36 and 37).

The Apex, Percussion Wave.—In the normal pulse-tracing the apex, *b* in fig. 10, is pointed. In some cases of aneurism, and in aortic stenosis, it may be rounded. As previously observed, a rounded apex is so exceptional that it should always be regarded with suspicion, and should never be accepted as a fact without repeated and most careful readjustment of the instrument, alteration of the pressure, etc.

The Line of Descent.—In the normal pulse-tracing the line of descent, *b* to *a'* (see fig. 10), is gradual, and is interrupted by one or more secondary waves.

The dicrotic wave, d, occurs about the middle of the line of descent, and is always present in a normal tracing. The dicrotic wave occurs immediately after the closure of the aortic valves. The point of the tracing corresponding to the closure of the valves is termed the aortic notch, *c*. If a line be carried down the base line from the aortic notch, as in the third pulse-wave (fig. 10), it will divide the tracing into two portions corresponding to the systole and the diastole of the ventricle. The dicrotic wave is partly due to a recoil current from the closed aortic valves, partly to oscillations of the arterial walls (Foster).¹

¹ According to Dr Burdon Sanderson, "dicrotism is characteristic of that condition of the circulation in which the arterial pressure is diminished while the venous is increased. It denotes that the capillary current, instead of being constant in its rate of movement, is markedly accelerated during diastole and retarded during the diastolic interval."—*The Pulse*, p. 26.

PLATE II.

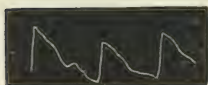


FIG. 4.—Pressure, $2\frac{1}{2}$ oz.



FIG. 5.—Pressure, $2\frac{1}{2}$ oz.

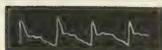


FIG. 6.—Pressure, 3 oz.

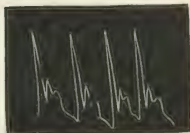


FIG. 7.—Pressure, 3 oz.

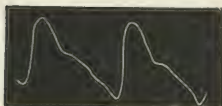


FIG. 8.—Pressure, $1\frac{1}{2}$ oz.



FIG. 9.—Pressure, $2\frac{3}{4}$ oz.

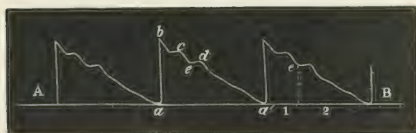


FIG. 10.—Pressure, 3 oz.

DESCRIPTION OF FIGURES.

- FIGS. 4 and 5.—*Alterations in the Pulse-tracings as the result of Cardiac Excitement.*—A. M., *et. 48*, admitted to the Newcastle Infirmary under Dr Byrom Bramwell, suffering from obscure spinal symptoms. The heart became excited, and the tracing shown in Fig. 5 was taken, immediately after that shown in Fig. 4, the instrument in the meantime remaining *in situ*. The spring pressure was the same in each case.
- FIGS. 6 and 7.—*Alterations in the Pulse-tracing which result from Cardiac Excitement.*—Figs. 6 and 7 show two tracings from a case of chlorosis. Case: E. F., *et. 19*, admitted to Newcastle-on-Tyne Infirmary under Dr Byrom Bramwell, 3d March 1878. The tracing shown in Fig. 6 was taken on 8th March; the tracing shown in Fig. 7 was made three minutes later, the instrument having remained *in situ*; the heart had become excited. Pressure in both cases = 3 oz.
- FIG. 8.—*Aortic Stenosis and Dilated Aorta.*—J. C., puddler, *et. 25*, admitted to Newcastle Infirmary under Dr Byrom Bramwell, 20th February 1879. The patient had been under observation for four years previously. Marked thrill and loud systolic murmur over base of heart and over aortic region. Heart moderately hypertrophied. Pressure = $1\frac{1}{2}$ oz.
- FIG. 9.—Tracing taken from the same patient with a slightly increased pressure; the apex is now pointed.
- FIG. 10.—*Sphygmographic Tracing of Normal Pulse.*—Male, *et. 25*, admitted to the Newcastle Infirmary under the care of Dr Byrom Bramwell, suffering from psoriasis.
- (1.) Line of ascent, up-stroke or percussion stroke = *a* to *b*.
 - (2.) Apex = *b*.
 - (3.) Line of descent = *b* to *a'*; *d* = aortic or dirotic wave; *e* = aortic notch; *c* = tidal wave.
- A B = base or respiratory line.
 1 = Systolic portion of the tracing, *i.e.*, with reference to the systole and diastole of the ventricle, not of the artery.
 2 = Diastolic portion of the tracing.

PLATE III.

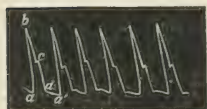
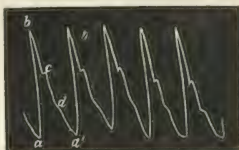
FIG. 11.—Pressure, $2\frac{1}{2}$ oz.

FIG. 12.—Pressure, 3 oz.

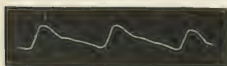
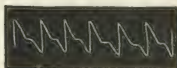
FIG. 13.—Pressure, $1\frac{1}{2}$ oz.

FIG. 14.—Pressure, 3 oz.

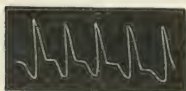


FIG. 15.—Pressure, 2 oz.

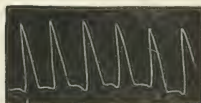
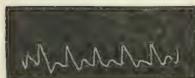
FIG. 16.—Pressure, $2\frac{1}{2}$ oz.

FIG. 17.—Pressure, 3 oz.

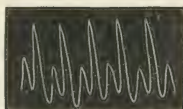


FIG. 18.—Pressure, 3 oz.

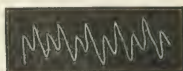


FIG. 19.—Pressure, 4 oz.

DESCRIPTION OF FIGURES.

- FIG. 11.—*Aortic Regurgitation*.—Case: G. A., *æt.* 56, admitted to Newcastle Infirmary under Dr Byrom Bramwell, 21st February 1878, suffering from shortness of breath and swelling of feet. Had been ill for three months. The face was pale and anxious, lips slightly dusky. Double aortic murmur; heart considerably hypertrophied; apex between 6th and 7th ribs, 3 inches below and 2 inches outside left nipple. Considerable hypertrophy and engorgement of right heart. Died 5th March 1878. Aorta very atheromatous; aortic valves very incompetent; segments shrunken, turned in towards the ventricle; coronary arteries much obstructed; cardiac walls fatty; left ventricle dilated; pericardium adherent. The arteries were practically empty during cardiac diastole. *a-b* = percussion stroke; *b* = apex; *c* = tidal wave; *d* indicates the position of the aortic wave, which is absent in this tracing.
- FIG. 12.—*Aortic Regurgitation*.—Taken from same patient as No. 11 after administration of digitalis. The letters have the same significance as in Fig. 11.
- FIG. 13.—*Aortic Stenosis*.—J. B., *æt.* 51, admitted to Newcastle Infirmary under Dr Byrom Bramwell, 29th November 1878, suffering from *anæmia* and dropsy. There was a well-marked aortic systolic murmur; the left ventricle was not hypertrophied. The pulse-tracing seems to show that the murmur was organic, and not hæmic.
- FIG. 14.—*Mitral Regurgitation*.—M. A. C., *æt.* 16, admitted to Newcastle Infirmary under Dr Byrom Bramwell, 24th January 1878, suffering from cough and shortness of breath, dating from an attack of rheumatic fever two months previously. Heart's action very rapid (120-130). The first sound appeared to be reduplicated; a systolic murmur at the apex, audible when the heart became slower.
- FIG. 15.—*Weak Pulse*.—R. R., *æt.* 17, admitted to Newcastle Infirmary under Dr Byrom Bramwell, 21st February 1878, suffering from idiopathic *anæmia*. Died 12th April. There was a systolic (anæmic) mitral murmur. The pulse-tracing resembles that of mitral regurgitation (see Fig. 14). Tracing made 23d February.
- FIG. 16.—*Progressive Pernicious Anæmia*.—Same patient (see Fig. 15). Tracing taken 19th March. The artery is almost empty during diastole.
- FIG. 17.—*Dicrotism*.—A. H., *æt.* 32, admitted to Newcastle Infirmary under Dr Byrom Bramwell, 21st March 1878, with an enormous scrofulous kidney. There were occasional rigors. This tracing was made during a rigor, the temperature being 100° F. A draught of hot milk was administered, and the tracing, shown in Fig. 18, was taken. Tracing Fig. 19 a few minutes later.
- FIG. 18.—*Hyperdicrotism*.
- FIG. 19.—*Hyperdicrotism*.

PLATE IV.

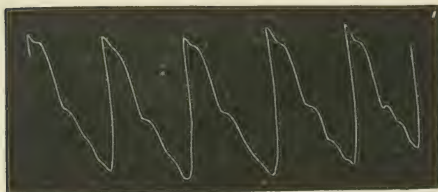


FIG. 20.—Pressure, $8\frac{1}{2}$ oz.

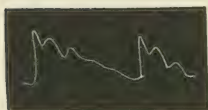


FIG. 21.—Pressure, 5 oz.

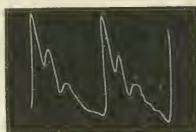


FIG. 22.—Pressure, 4 oz.

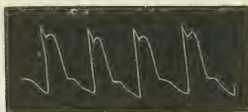


FIG. 23.—Pressure, $2\frac{1}{2}$ oz.

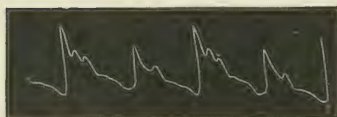


FIG. 24.—Pressure $4\frac{1}{2}$ oz.

DESCRIPTION OF FIGURES.

FIG. 20.—*Hypertrophy of Left Ventricle*.—A. T., æt. 54, admitted to Newcastle Infirmary under Dr Byrom Bramwell, suffering from cirrhotic kidney.

FIG. 21.—*Chronic Bright's Disease*.—D. G., æt. 40, admitted to Newcastle Infirmary under Dr Byrom Bramwell, 5th September 1878, suffering from renal dropsy (large white kidney). The pulse is one of high tension; the tidal wave is strongly marked.

FIG. 22.—*Acute Bright's Disease*.—Tidal wave strongly marked, from a patient admitted to the Newcastle Infirmary under the care of Dr Drummond.

FIG. 23.—*Atheroma and Aneurism of Aortic Arch*.—J. D., æt. 52, admitted to Newcastle Infirmary under Dr Byrom Bramwell, 21st February 1878, suffering from aneurism of the ascending portion of the aortic arch and atheroma. The tidal wave is very strongly marked. There was no perceptible difference between the two pulses.

FIG. 24.—*General Atheroma*.—J. D., æt. 60, admitted to Newcastle Infirmary under Dr Byrom Bramwell, 21st October 1878. The radials were very tortuous and rigid; there was no valvular lesion. The tidal wave only occurs every alternate beat.

The dicrotic wave is absent in free aortic regurgitation (see figs. 11 and 12). It is feebly marked in many pulses of high tension (fig. 20) and where the arteries are rigid, atheroma. In some cases it is greatly exaggerated, and the pulse is then said to be dicrotic (see figs. 17, 18, and 19). In such cases each pulsation may seem (to the finger) to consist of two beats (the double pulse).

The conditions which favour the occurrence of dicrotism are:—1. A sudden, sharp ventricular systole. 2. Low arterial tension. 3. Extensibility with elastic recoil of the arterial walls. 4. According to Roy, dicrotism is due to an active contraction of the arterial walls.

Clinically dicrotism is chiefly seen in cases of pyrexia. In persons in vigorous health it is developed when considerable elevation of temperature— 102° – 104° F.—has continued for some time (as in typhus, enteric fever, etc.) In feeble persons and in those emaciated by disease a slight elevation of temperature is sufficient to produce it (see figs. 17, 18, and 19). Dicrotism is a sign of weakness, and indicates the use of stimulants.

A hyperdicrotic pulse is a dicrotic pulse in which the full development of the dicrotic wave is prevented by the occurrence of the ventricular systole. A dicrotic pulse becomes, therefore, hyperdicrotic when the rapidity of the pulse-rate is increased. The hyperdicrotic pulse is usually only seen in cases of high fever with great exhaustion. I have, however, seen it occur in a greatly debilitated patient with only a moderate rise in temperature (see fig. 18). If the pulse becomes still more rapid, the dicrotic wave is altogether lost and the pulse becomes monocrotic.

The *predicrotic* or true tidal wave, *c*, is situated between the apex and the aortic notch. It corresponds to the prolongation of the ventricular systole, and is the true blood or tidal wave. It is not always present as a distinct wave (see figs. 14, 15). According to Dr Galabin, the separation of the percussion and tidal waves is due to the inertia of the sphygmograph, and does not occur within the artery. In cases of low arterial tension, and where the arterial walls are elastic, it is often absent. *Vice versa*, it is best marked where there is great difficulty of arterial collapse, as in cases of contracted kidney (see fig. 20), where the arterial collapse is delayed by the high tension, and in cases of atheroma (see fig. 23), where the arteries are inelastic, and hence do not readily contract. In atheroma the pulse is usually of *low tension*, *i.e.*, readily effaced by a small amount of pressure. The predicrotic wave may be present in some and absent in other pulse-curves of the same tracing. In one of my cases (see fig. 24) it occurred with every alternate beat. (The explanation of this circumstance was obscure.)

Other secondary waves sometimes occur in the lower part of the line of descent. Their causation is obscure, but, so far as is known, they are of little practical importance. In a normal tracing the different pulse-waves are identically the same, and the base line is horizontal (see fig. 10).

The Characters of the Pulse in Health and Disease.

1. *The Frequency of the Pulse.*—The frequency of the pulse is determined by counting the number of pulsations per minute.

The pulse should be counted for a whole, not for part of a minute.

When the pulse at the wrist is very feeble the number of cardiac contractions can be determined by auscultation over the left ventricle. In some cases, where the pulse is too feeble to be felt, its frequency can be determined by the careful application of the sphygmograph.

In the case of children and nervous persons it is often difficult to get a proper estimate of the pulse-rate owing to the increased action of the heart which results from mental agitation, the presence of the doctor, etc. Due allowance must be made for this and other disturbing causes. It is often possible at the end of the visit, when the patient's agitation has subsided, to correct the preliminary observation.

Frequency in Health.—The normal frequency varies in different individuals, and in the same individual under different circumstances. The average normal rate in the adult male in a state of rest is 72. In some individuals the normal pulse-rate is as high as 100, in others as low as 50. The possibility of such idiosyncrasies must therefore be kept in view. The pulse is quicker in children than in adults, in women than in men. Its frequency is lessened in old age. It is increased by mental excitement, by food, etc., etc. It varies, too, with the position of the patient, being quicker in the standing than in the sitting, and in the sitting than in the recumbent position. The frequency also varies with the time of day, being lower during the early morning hours. It is also decreased during sleep. The pulse-rate is either increased or diminished by disease.

Increased Frequency.—The chief pathological conditions in which the frequency of the pulse-rate is increased are:—

1. *Pyrexia* (increased temperature), see fig. 18. As a rule, the amount of increase varies with the height of the temperature. According to Dr Aitken, an increase of temperature of one degree Fahr. above 98° Fahr. corresponds with an increase of ten beats of the pulse per minute, as shown in his table.

Temp. Fahr.		Pulse-rate.	Temp. Fahr.		Pulse-rate.
98°	.	60	103°	.	110
99°	.	70	104°	.	120
100°	.	80	105°	.	130
101°	.	90	106°	.	140
102°	.	100			

In some cases of typhoid, especially in its earlier stages, and in meningitis, the pulse may be slower than natural. At the commencement, too, of some cases of pericarditis the frequency of the pulse is diminished (Stokes).

2. In many affections associated with extreme debility (see fig.

15). This is chiefly the case where there has been some previous elevation of temperature, or where the nerve irritability of the heart is increased.

3. In deranged innervation of the heart (paralysis of the vagus or irritation of the sympathetic, the latter being the most common cause). In some of these cases the pulse is extremely rapid, as in exophthalmic goitre.

4. In some cases of organic cardiac disease, especially mitral lesions (see fig. 14), and to a less extent in aortic regurgitation (see fig. 11.)

The Clinical Significance of Increased Frequency of the Pulse.

Increased frequency of the pulse, when not merely temporary, is very suggestive of the presence of pyrexia. It is, however, *per se*, an unreliable sign of fever, for, on the one hand, fever may be present without increased frequency of the pulse, as in typhoid and meningitis; or, on the other, increased frequency of the pulse may occur without fever, or even with a low temperature, as in pro-agonistic collapse. In order to ascertain the cause of the increased frequency of the pulse, the first step is to ascertain the presence or absence of pyrexia (by means of the thermometer). If there is no pyrexia, the causes mentioned under heads 2, 3, 4 must be looked for.

Diminished Frequency of Pulse (slow pulse).

The chief pathological conditions associated with a slow pulse are:—

1. Functional derangement of the heart, as in some cases of gout, jaundice.

2. Organic lesions of the heart, as fatty degeneration, aortic stenosis (see fig. 13).

3. Organic lesions of the nervous system, causing irritation of the vagi or their roots, as meningitis, compression, etc.

4. In the rapid defervescence of fever the frequency of the pulse is often very strikingly diminished.

The Clinical Significance of a Slow Pulse.

Where it occurs *per se*—i.e., without any obvious cause, as in senectus—it is of little importance. The possibility of its being due to irritation about the roots of the vagi must be remembered, and the symptoms of disease at the base of the brain, medulla, looked for.

In other cases its clinical significance depends upon the cause of the associated condition, jaundice, etc., etc.

The Rhythm of the Pulse.

In health the pulse is perfectly regular both in time¹ and volume (see fig. 10).

¹ Exceptions to this rule sometimes occur, and depend on idiosyncrasy.

Alterations in rhythm are frequent in disease.

Time Irregularities.—All degrees of irregularity are met with. In some cases the alteration is only occasional, every ten, twenty, or thirty beats; in others the normal rhythm of the pulse is very much altered or entirely lost (see fig. 26).

Intermittent Pulse.—In some cases the irregularity consists in the omission of a beat (see fig. 27). This is due either to arrest of the ventricular systole, a common and often unimportant condition, or to feeble contraction of the ventricle, the blood-wave being too weak to reach the wrist—a very serious indication of failure of the heart's action. In some cases the irregularities occur at fixed intervals, *i.e.*, every two, three, or four beats. One of the most interesting of these varieties is the pulsus bigeminus of Traube, in which the pulse-beats run in pairs, each pair being separated by a considerable interval.

The chief pathological conditions associated with irregularities in time are:—

1. *Functional derangements of the nervous mechanism of the heart* (venereal excess, gouty affections, tobacco, etc.).

2. *Mitral lesions*—both stenosis and regurgitation—especially after failure of compensation (see figs. 28, 29, 30, 31).

3. *Disease of the central nervous system*, such as meningitis.

In these cases a sudden change in the position of the patient—*i.e.*, rising from the recumbent position—often causes a striking alteration in the rhythm and frequency of the pulse.

4. *Extreme fatty degeneration.*

Clinical Significance of Time Irregularities.

The importance of irregularity depends upon its cause: *per se*—*i.e.*, without any organic disease of the heart or nervous system—it is of very little consequence.

Irregularities in Volume.—Irregularity in different pulse-beats depends upon unequal quantities of blood being discharged into the arterial system by the left ventricle.

Inequality in volume often depends upon and is associated with irregularity in time, for when the time between the ventricular contractions varies, the amount of blood which the ventricle has to discharge into the arteries will vary. Inequality in volume is chiefly seen in mitral lesions (see figs. 28, 29, 30, 31) and structural lesions of the cardiac walls.

Inequality due to the Influence of Respiration.—Irregularities both in time and volume sometimes depend upon the changes produced in the intra-thoracic tension by inspiration and expiration.

In the normal condition of respiration the line uniting the bases of a series of pulse-curves as obtained by the sphygmograph is even and horizontal (see fig. 10); hence it has been called the respiratory line. In the forced expiration of health, and still more markedly in some cases of disease (see fig. 32), this base line becomes

PLATE V.



FIG. 26.—Pressure, 2 oz.

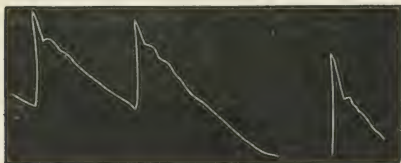


FIG. 27.—Pressure, 4 oz.



FIG. 28.—Pressure, 3½ oz.

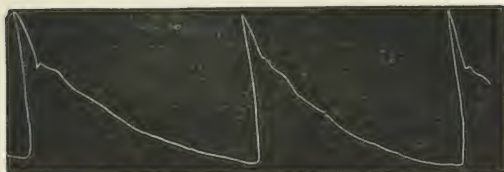


FIG. 29.

DESCRIPTION OF FIGURES.

FIG. 26.—*Extreme Irregularity and Failure of the Heart.*—J. R., *æt.* 68, admitted to the Newcastle Infirmary under Dr Byrom Bramwell, 28th December 1878. Died 31st December. Croupous pneumonia, limited to the upper lobe of the right lung. No cardiac affection.

FIG. 27.—*Intermittent Pulse.*—J. R., *æt.* 38, admitted to the Newcastle Infirmary under Dr Byrom Bramwell, 11th July 1878, suffering from mitral regurgitation. The heart was much hypertrophied. Tracing made 6th January, when patient was much improved and attending as an out-patient.

FIG. 28.—*Irregularity of the Pulse.*—W. M., *æt.* 50, admitted to Newcastle Infirmary under Dr Byrom Bramwell, 30th November 1878, suffering from the usual symptoms of mitral disease. The heart's action was extremely irregular. The left ventricle much hypertrophied. There was no rheumatic history. The symptoms were of two months' duration.

FIGS. 28 and 29 were two consecutive tracings taken on 10th December, after the patient had improved under digitalis. The intermittent action of the heart is well shown in Fig. 29.

PLATE VI.



FIG. 30.—Pressure, 4 oz.

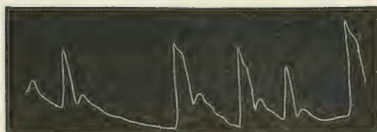


FIG. 31.—Pressure, 3 oz.



FIG. 32.—Pressure, 2½ oz.

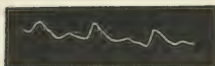


FIG. 33.—Pressure, 2 oz.



FIG. 34.—Pressure, 1½ oz.

DESCRIPTION OF FIGURES.

FIG. 30.—*Mitral Regurgitation*.—S. B., æt. 58, admitted to the Newcastle Infirmary under Dr Byrom Bramwell, 25th February 1878, suffering from cardiac dropsy. There was a well marked mitral systolic murmur, which disappeared under treatment. The heart was considerably enlarged (hypertrophied and dilated).

FIG. 31.—*Irregular and Intermittent Pulse*.—O. M., æt. 40, admitted to the Newcastle Infirmary under Dr Byrom Bramwell, suffering from cardiac dropsy. The heart was very much enlarged; apex beat 4½ inches below and 3 inches outside left nipple; systolic mitral murmur.

FIG. 32.—*Uneven Respiratory Line*.—J. R., æt. 31, admitted to Newcastle Infirmary 26th December 1878, under Dr Byrom Bramwell, suffering from acute bronchitis.

FIG. 33.—*Small Weak Pulse*.—J. M., æt. 18, a soldier, admitted to the Newcastle Infirmary under Dr Byrom Bramwell, 23d January 1879, suffering from abscess of the liver and pericarditis. The heart was displaced upwards and to the left.

FIG. 34.—*Small Pulse of Mitral Regurgitation*.—M. H., æt. 7, admitted to the Newcastle Infirmary under Dr Byrom Bramwell, 16th October 1878, suffering from mitral regurgitation and severe bronchitis. There was considerable hypertrophy of the left ventricle. The tracing was made when the patient was convalescent from the bronchitis.

uneven, the frequency of the pulse and the arterial tension being increased by expiration, lowered by inspiration.¹

In extreme cases the pulse-wave may be entirely absent during inspiration. This is the *pulsus paradoxicus* of Kussmaul. The most striking examples of this condition are seen where fibrous adhesions pass between the thoracic parietes and the roots of the aorta and great vessels. During a full inspiration these fibrous bands are stretched, the vessels are constricted, and the pulse-wave is unable to reach the wrist.

The *pulsus paradoxicus* has also been noted in cases of pericarditis without constricting adhesions; also in cases of stenosis of the air-passages.

The *volume* of the pulse depends upon—(1) the size of the artery; (2) the amount of blood propelled into it at each ventricular systole.

The volume of the pulse is judged of by the finger, or accurately measured by means of the sphygmograph. In the pulse-curve the height of the tidal wave is the true measure of the volume of the pulse.

In *health* the volume of the pulse varies, of course, in different individuals, and in the same individual under different circumstances.

The Volume of the Pulse in Disease.—A large pulse is seen—1. In all conditions in which the arteries are dilated or relaxed, as in atheroma, febrile conditions with relaxed vessels, hot stage of intermittent fever, rheumatic fever, the early stage of the fastigium of the specific fevers. 2. In all cases in which the left ventricle is discharging a large quantity of blood into the aorta, as in hypertrophy, simple nervous excitement, etc. (see figs. 5, 20).

A *small* pulse is met with in all cases where—

1. A small quantity of blood enters the arterial system at each ventricular systole. (1.) Where the blood in the body is diminished in quantity, inanition, etc. (see fig. 17). (2.) Cases of obstruction or regurgitation at the mitral valve (fig. 14), or obstruction at the aortic orifice (fig. 14). (3.) Cases in which the left ventricle is acting very feebly (fig. 33). A small thready pulse from this cause is a very serious indication. It occurs towards the termination of many diseases, degeneration of the cardiac muscle (figs. 17, 33), etc.

2. In cases where the vessels are in a state of contraction. The

¹ At the beginning of inspiration the arterial pressure falls; it soon, however, begins to rise, but does not reach the maximum until some time after expiration has begun. The fall continues during the remainder of expiration, and passes on into the succeeding inspiration (Foster, page 344). In speaking of the cause of the respiratory undulations, Foster says, "We may conclude, then, that the respiratory undulations of blood-pressure are of complex origin, being partly the mechanical results of the thoracic movements, possibly also produced by the alternate expansion and collapse of the pulmonary alveoli, but probably, in addition, brought about by a rhythmical variation of the vascular peripheral resistance, the result of a rhythmical activity of the vasomotor centre."

cold stage of fevers, some cases of collapse (cholera), in inflammatory affections of the abdomen (small wiry pulse of peritonitis).

The *compressibility* or tension of the pulse depends upon the tone of the arterial walls. It is measured by the finger or the sphygmograph. The amount of pressure required to obliterate the pulse is the true measure of its tension. In vigorous health the tension of the pulse is considerable. In delicate persons and in those who lead effeminate lives the tension is low.

A pulse of high tension is sometimes large, sometimes small. An example of the former is seen in cases of contracted kidney (see fig. 20), in which the high tension is associated with hypertrophy of the left ventricle. The pulse of peritonitis is an example of the latter. In some cases of kidney disease (especially the cirrhotic form) the tension of the pulse is of great importance as a means of diagnosis and as a guide to treatment.

A pulse of *low tension* is very common in disease, and is of great importance for diagnosis and treatment. Low tension is associated with relaxation of the vessels, and often with feeble action of the heart. A low-tension pulse may be small or large. The former is seen in mitral lesions; the latter in certain inflammatory conditions, as, for example, rheumatic fever, hot stage of ague, also in atheroma, where the pulse is large in volume but easily compressible. A pulse of low tension is often dicrotic.

THE INDIVIDUAL CHARACTERS OF THE PULSE-WAVE.

The Duration of the Systole to the Diastole (the celerity of the pulse).—In some cases the artery quickly reaches its point of maximum distention, and quickly subsides. Such a pulse is jerking in character. It is seen in its most marked form in aortic regurgitation (see figs. 11 and 12); also in nervous palpitation with relaxed vessels (see fig. 7). In other cases the pulse remains full for a considerable time. The rise in many of these cases is gradual; in others, as in atheroma (see fig. 23), it may be sudden. The celerity of the pulse is well brought out by the sphygmograph.

Dicrotism.—The presence or absence of dicrotism is of great importance, as has been already stated (see page 525).

Thrill.—In some cases a thrill can be felt over the radial pulse, and a murmur heard through the stethoscope. Thrill occurs in some cases of aortic regurgitation, and in some cases of vaso-motor dilatation with excited action of the heart.

The Condition of the Arterial Coats.—It is important to note the condition of the superficial vessels with regard to the presence or absence of atheroma. The chief indications of that condition are, rigidity of the arterial coats, tortuosity of the vessel, which is generally visible (stands out like a cord), and a well-marked tidal wave. The tension of the pulse is usually low.

When the superficial vessels are atheromatous the aorta is always in the same condition. The vessels of the brain are frequently affected too. The presence or absence of atheroma in the super-

PLATE VII.

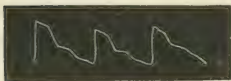


FIG. 35.—(Right radial). Pressure, $3\frac{1}{2}$ oz.



FIG. 36.—(Left radial). Pressure, $2\frac{1}{2}$ oz.

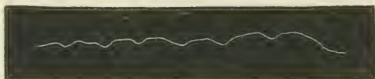


FIG. 37.—Pressure, 3 oz.

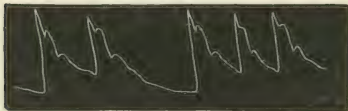


FIG. 38.—Pressure, 3 oz.

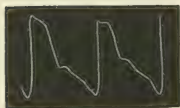


FIG. 39.—(Right radial). Pressure, $\frac{1}{2}$ oz.

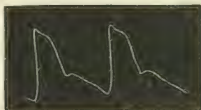


FIG. 40. (Left radial). Pressure, $\frac{1}{2}$ oz.



FIG. 41.—(Right radial). Pressure, 3 oz.

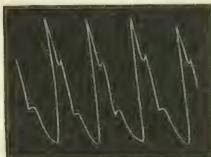


FIG. 42.—(Left radial). Pressure, 3 oz.



FIG. 43.—(Right radial). Pressure, $2\frac{1}{2}$ oz.



FIG. 44.—(Left radial). Pressure, $2\frac{1}{2}$ oz.

DESCRIPTION OF FIGURES.

- FIGS. 35 and 36.—*Aneurism of Left Subclavian*.—J. M., *æt.* 50, admitted to Newcastle Infirmary under Dr Byrom Bramwell, 5th September 1878; all the waves in the left tracing are obliterated.
- FIG. 37.—*Aneurism of Left Axillary Artery (left radial tracing)*.—L. G., *æt.* 63, admitted to the Newcastle Infirmary under Dr Byrom Bramwell, 7th March 1878, with a large aneurism of the left axillary artery. The apex is rounded; all the curves are obliterated.
- FIG. 38.—*Aneurism of Left Axillary Artery (right radial)*.—Right radial tracing for the same patient. The pulse is intermittent, but all the curves are well marked.
- FIGS. 39 and 40.—*Aneurism of Ascending Portion of Aortic Arch*.—J. D., *æt.* 50, admitted to Newcastle Infirmary under Dr Byrom Bramwell, suffering from a large aneurism of the ascending thoracic aorta and atheroma. There is no important difference between the two pulses.
- FIGS. 41 and 42.—*Case of Multiple Aneurisms*.—M. F., 64, admitted to the Newcastle Infirmary under Dr Byrom Bramwell, 18th February 1878, suffering from symptoms of intra-thoracic pressure. Died 10th March. *Post-mortem* showed dilatation and small aneurism of aortic arch. Fusiform aneurisms of the innominate, left common carotid arteries, and left subclavian, just above their origins. The aneurisms were filled with firm clots, through which a straight narrow channel for the blood remained.
- FIGS. 43 and 44.—Difference in the radial pulses, the result of pressure by an intra-thoracic tumour on the innominate artery. J. F., *æt.* 50, admitted to the Newcastle Infirmary under Dr Byrom Bramwell, 24th January 1878.

ficial vessels may therefore be of diagnostic importance, as, for example, in the case of a doubtful intra-thoracic tumour. Other points being equal, its presence would be in favour of an aneurism as against a solid growth.

The comparison of the two radial pulses is sometimes useful in the diagnosis of aneurisms and intra-thoracic tumours. In comparing the two pulses, attention must be paid to (a) their synchronism as to time; (b) the character of the pulse-wave in each vessel.

Differences in time are most readily appreciated by the finger. In health the two radial pulses are synchronous. Where the blood-current passes through the sac of an aneurism the flow is sometimes delayed and the pulse retarded. Thus, for example, a globular elastic aneurism of the innominate artery will cause retardation in the right radial and carotid pulses.

Differences in the character of the two pulse-waves are ascertained by the finger, or more accurately by the sphygmograph. These differences consist in alterations in the size and tension of the pulse, and in the form of the pulse-curve.

The precautions which it is necessary to observe in taking comparative tracings of the two pulses have already been described (see page 523). In some individuals there is a slight difference in the size of the two pulses, even when the distribution of the vessels is normal. All the other characters of the two pulses, when normal, are the same.

In some cases the distribution of the artery is irregular (high division of the radial). In cases of inequality of size this fact must always be remembered, and the condition of the vessels higher up (brachial and axillary arteries) must be examined.

Differences in the two pulses may be due to—(1), the pressure of a tumour, solid or aneurism, on the vessels of one side (see figs. 43 and 44); (2), the alteration of the blood-wave on one side in its passage through an aneurismal sac; (3), obstruction or obliquity of the vessels arising from a diseased aorta (atheromatous or aneurismal); (4), local disease in one radial artery. The alteration produced by the passage of the blood-wave through an elastic aneurism consists chiefly in rounding of the apex of the tracing and obliteration or defacement of the normal curves. This is sometimes of considerable diagnostic importance. Figs. 35 and 36 represent the right and left pulse-tracings for a patient who was admitted to the Newcastle-on-Tyne Infirmary, under my care, suffering from dyspepsia. There was no complaint of any thoracic trouble. On taking a tracing of the left radial (I was at that time working at the sphygmograph, and taking tracings of every case admitted to hospital) I was, of course, at once struck with its aneurismal character, and on careful physical examination found decided dulness, faint pulsation, and marked accentuation of the cardiac sounds over the chest at a point corresponding to the origin of the left subclavian artery. Figs. 37 and 38 represent tracings for a large aneurism of the axillary artery.

In all aneurisms this difference in the pulse-tracings will not be observed. If, for example, the aneurism involves the aortic arch before the origin of the great vessels, the pulse-wave at the two wrists will present the same characters (each pulse-wave will be affected, *quoad* its waves, in a like degree). Figs. 39 and 40 illustrate this point. Again, it may so happen that an aneurism is situated on the vessel of each side, or that an aneurism is so filled up with clot that the pulse-wave is very little if at all affected in its passage through it. Such was the fact in a remarkable case of multiple-aneurism which I have recorded in this Journal (see *Edinburgh Medical Journal*, June 1878, p. 1076). The pulse-tracings in that case were almost identically the same (see figs. 41 and 42). In figs. 43 and 44 the difference in the two tracings was probably due to the pressure of a solid tumour on the innominate artery.

Asynchronism of the radial pulse and cardiac contractions occurs sometimes in—1. Fatty degeneration; 2. Extreme mitral regurgitation; 3. Other irregularity of the heart (Walshe). As a rule, in such cases the frequency of the pulse is considerably increased.

Part Second.

REVIEWS.

On Diseases of the Skin, including the Exanthemata. By FERDINAND HEBRA, M.D., and MORIZ KAPOSI, M.D. Volume V. Translated and edited by WARREN TAY, F.R.C.S. The New Sydenham Society. London: 1880.

Finis coronat opus is an old and trite saying, yet it is not always—nay, not often—the lot of man to see his labours fully completed before he leaves the earthly stage. Baron von Hebra may be said to have been one of those fortunate few who lived long enough to look on at least two great works, well-nigh the outcome of a life's toil, placed in the hands of posterity and brought fully up to date. His *Atlas of Skin Diseases*, the most splendid of its kind, and now rarely procurable, since the impressions of the earlier parts were limited in number (we saw a copy advertised the other day, price 800 marks, or £40), may be said to be as complete as any such work can be, looking at the infinite varieties of aspect under which the dermatoses present themselves. Now, thanks to the energy and liberality of the New Sydenham Society, the fifth and last volume of his classical treatise on diseases of the skin is accessible to all English readers who cannot peruse it in its German original. Fourteen years ago the first volume of the translation appeared, and marked an epoch in medicine; for we may safely

assert that the influence of Hebra's teaching penetrated far beyond the mere sphere of dermatology. Though confining himself with rare self-denial to his proper subject, many of the questions started by Hebra dealt with issues affecting the entire organism. At that time the danger of driving in a cutaneous eruption was gravely discussed, and the idea that a skin disease could almost in any case be treated as a mere local ailment was scarcely credited. It needed then all the weight of Hebra's authority to gain even a hearing on such questions, and many were inclined to regard his wonderful success in curing such diseases as due to a difference in their nature in Austria as compared with Great Britain, a theory which has some, but these rather slender, grounds on which to base it. Hebra found skin diseases almost in a state of chaos, due in great measure to the fascination which the classification of Willan and Bateman exerted. It seemed by it such an easy matter till one tried to find out what any eruption was. The primary lesion, be that papular, vesicular, squamous, pustular, etc., had only to be found out, like the relative number of stamens and pistils in the Linnean botanical system. And then the disease must be one of three or four, which was determined by a further process of exclusion. The classification of Hebra changed all this. Skin diseases were viewed from a natural stand-point. The relationship which one form bore to another came to be inquired into, and thus points of contact and dissimilarity made themselves visible which had never previously been dreamt of. Hebra's arrangement has often been assailed, yet the proposers of each new one have always paid him the compliment of taking his as a basis.

The treatise has been for some years complete in German; indeed, a second edition of the first half, containing various emendations and corrections, has been published. While the greater part of the first half was written by Hebra himself, the remainder, and the revisal of the second edition, was entrusted to his son-in-law, Kaposi, to whom it has evidently been a labour of love. He has in great measure copied Hebra's style, and laid under contribution every work of consequence bearing in any way on his subject. The volume before us deals with cutaneous ulcers, neuroses of the skin, and the parasitic disorders which affect it. Of non-contagious ulcers that of the leg is assumed as the type, and its description and history are drawn with an accuracy which finds a response in the experience of every one. The part played by varicosity of the veins in leading to the formation of ulcers of the leg is distinctly shown; and in a note we find the following valuable practical hint:—"In many cases in which persons have complained of severe 'gouty' pains, increasing towards evening, in the neighbourhood of the ankle, sole of the foot, and heel, and where, on examination, I have found varicose veins, I have been fortunate enough to remove the pains by the mere application of a compressive (flannel) bandage."

Chancre is treated of under the head of contagious ulcers.

This section is evidently the result of much thought; we know that it must be based on experience of a most extensive kind, yet the manifest difficulties of the subject crop up in every page. It is admitted that to define a chancre cannot yet be quite satisfactorily accomplished, while it is plain that we are still far from having solved the question of its connexion with constitutional syphilis; unity and duality convey no precise meaning, while those who employ them as terms use them in different significations. The opinion is held that the chancreous virus, using the term in its widest sense, can gain access to the system by simple penetration into a follicle. This granted, we have an explanation how syphilis occurs in cases where no abrasion of the skin was ever present, and instances accounted for where, without a chancre, constitutional symptoms appeared. Here the poison may have been absorbed by the glands of the urethra, the symptoms of chancre being modified by the exclusion of air, and perhaps by the frequent passage of urine. Symptomatic syphilitic ulcers, or ulcerating syphilides, are described exhaustively, according as their features are modified in accordance with the locality affected; their diagnosis, the most important point concerning them, is specially considered.

Hebra and Kaposi limit the signification of cutaneous neuroses to "those pathological conditions of the general integument which represent an abnormal or disturbed innervation, without there being in the skin itself or its nerves any pathological change which can be detected or demonstrated by the means of research at present available." The tendency just now is undoubtedly to lay the blame on the nervous system whenever the cause of any morbid process in the skin is not clear, and thus, in the opinion of many, the class of neuroses of the skin is constantly receiving new additions. More especially, many skin diseases are thought by some to owe their origin to some perverted action on the part of the vaso-motor nerves; yet, as Kaposi remarks, "it has not as yet been shown how far the abnormal influence of the vaso-motor nerves is a primary element in the exudative and inflammatory processes, or whether it is not rather, in many cases at least, secondary." The only neuroses of the skin, according to Hebra and Kaposi, are the sensory ones. Of these pruritus alone calls for much notice. Of it, both in its local and universal forms, a full account is given; and we are favoured with as much light as modern research has thrown on the causes which lead to it, a light which, it must be admitted, is not great. Under such circumstances rational treatment is seldom available, but the best means of combating it are mentioned. The value of pilocarpine was not ascertained when the volume was written; it certainly is worth a trial when other means fail.

One of the vexed questions of the present day is the relationship which certain microscopic organisms bear to various diseases in

inducing and in propagating them. It is almost universally agreed that several well-defined skin diseases are most intimately connected with fungi of a low order, and it would seem that a field of great promise lies there ready for inspection and observation. Kaposi reviews and systematizes all that has been done in this direction; yet the results are conflicting, and it is quite evident we are but on the threshold of the inquiry. Hallier's ingenious idea of the developmental connexion between bacteria and fungi has been much damaged by the investigations of Cohn, which tended to separate bacteria from the mycelial fungi; while still more recently Sachs has formulated the suggestion as to the polymorphism of fungi made by other observers, so that we are unable to assign their proper botanical place to the parasitic organisms found in favus, in tinea tonsurans, or in tinea versicolor, or even to decide with any certainty whether the fungus found in each of these is distinct and independent or one and the same, though the former is the most probable view, and the one to which, after a critical examination of the evidence adduced, Kaposi gives his support. Under favus, which is described at great length, an honour is paid indirectly to the Edinburgh school, inasmuch as one of the late Professor Bennett's beautiful drawings is reproduced unchanged, Kaposi acknowledging that as yet no better illustration of the achorion is attainable. Favus is one of those diseases favoured by uncleanness; it is dying out among us; is rare in Vienna, nearly all the cases met with there coming from Austrian and Russian Poland; yet is still extremely common, comparatively, in France. The mode in which the spores gain access to the skin, and the manner in which they develop when there, is elaborately wrought out. Though denied by some, it is shown that sometimes, at least, the fungus penetrates into the deepest part of the hair-bulb, where the cells are yet young and succulent, in apparent exception to the parasitic fungi of the skin in general, as these seem only to flourish in epithelial structures which are no longer actively growing. Interesting as favus is, tinea tonsurans far surpasses it in this respect, at least from a practical point of view, since its frequent occurrence, its obstinacy, and the horror with which it is regarded by the laity, make a thorough acquaintance with it most desirable. The clinical history of the disease may be said to be complete, but there is much still with respect to the fungus associated with it of which we are ignorant; and Kaposi is no less precise in relating fully what we know as he is in indicating the blanks in our knowledge yet to be filled up. A form of it is described as of frequent occurrence in Vienna, which, if not absolutely unknown, is certainly rare in the extreme here; this is tinea tonsurans maculosa when met with as an acute and universal eruption. Mysterious as is, in many cases, the source of origin of those rings and patches of ringworm seen commonly enough on the face, neck, or extremities, yet it is certainly unusual to find an eruption of spots and papules

due to the trichophyton tonsurans appear all at once dotted over the trunk and extremities, change in character within a few hours, though the disease may last as a whole from two to six months. There seems no doubt of the truly parasitic nature of this form, but it is not by any means easy in all cases to demonstrate the fungus. This form sometimes passes into a scaly stage, and then the eruption is a very remarkable one. As such it has not been figured in any English atlas, but an admirable illustration is given for diagnostic purposes in that of syphilis by Kaposi. In its early stage it may simulate an acute outbreak of psoriasis, of eczema papulosum, of roseola syphilitica, and, we may add, erythema circinatum or papulatum.

Another indication of the difference between ringworm as met with here and in Vienna is shown by this statement of Kaposi's (the italics are ours), "that it, in the majority of cases, occurs on non-hairy parts, and *here persists very frequently for many years*, and, on the contrary, is met with comparatively rarely on the scalp" (p. 245). In Edinburgh, at least, the relative frequency is certainly reversed. As to the persistency of ringworm of the body, we must say the statements of our author are somewhat contradictory. Compare the paragraph just cited with the following, taken from an appendix devoted to eczema marginatum:—"Tinea tonsurans, when occurring on parts where there are no hairs, and whether attended by vesication or not, *is incuriably an acute malady*—that is, the groups or circles of small vesicles, or the red, slightly scaly patches characterizing the disease, increase in size for a short time (some weeks), then dry up or become pale, and always finally disappear, even without any treatment having been employed. *It is only when tinea tonsurans occurs on hairy parts that it is of an intractable character*" (p. 318). The section on treatment is scarcely all that can be desired; there is a want of precision about it. And we cannot agree with Kaposi when he says under favus, and implies the same under tinea tonsurans, that all of a long list of parasiticides are equally efficacious. We may be wrong, but we confess to having preferences; and this loose mode of expression hardly coincides with what he says in his own and more recent work on skin diseases as to the necessity there is for the adaptation of remedies to the stage of the disease, the locality, and the case itself,—a necessity which applies with much force to ringworm of the scalp.

An interesting historical chapter is that which is devoted to the so-called morbus pedicularis, the "loathsome disease" alluded to by many authors. The recorded instances from the earliest times are specified, the most recent being two very singular examples which came under the notice of Gaulke in 1863. Hebra denies the existence of such a disease, not, of course, of phtheiriasis in its ordinary sense. Yet, with all deference to his vast experience, it is hard to believe that every one of the observers quoted was wrong.

and we still, on this as on many other dubious points, hold to the opinion "that there are more mysteries 'twixt earth and heaven than are dreamt of in our philosophy."

We must now bid this volume farewell. In no respect does it fall short of its predecessors. The indefatigable diligence in searching out what has been done and written in the past never flags, and the wonderful clinical experience of its authors shines reflected on every page. Mr Tay has done the task of translation more than well; he has rendered the German into elegant English, and has made the work more valuable than the original by appending here and there notes of his own, illustrating still further important points. Some corrections and additions which were found in the second German edition of the first part have also been embodied in this, so that the English reader enjoys the advantage of Hebra's latest views.

Atlas of Skin Diseases. By LOUIS A. DUHRING, M.D., Professor of Skin Diseases in the Hospital of the University of Pennsylvania, etc.; Author of "A Practical Treatise on Diseases of the Skin." Part VII. Philadelphia: J. B. Lippincott & Co.: 1880.

DR DUHRING'S beautiful Atlas grows apace, and so far exhibits no sign of falling off; each part as it appears is executed with as much care as its predecessor. The four plates in part seven are devoted to eczema pustulosum, impetigo contagiosa, syphiloderma papulosum, and lupus vulgaris. The first plate unmistakably represents the more diffuse and superficial variety of pustular eczema, where the typical moist form of the disease has passed beyond the simple stage, and the exudation has become purulent. All the features—the red, raw surfaces shading off gradually at the margins, the swelling and infiltration of the skin, and the puriform crusts—are excellently shown. Without being at all diagrammatic, all the stages of impetigo contagiosa are exhibited at once on the face and hands of a child. The early vesico-pustular stage is not very often brought under our notice, the disease being usually quite in that of crusting when we first see it. With this plate beside him no one could fail to recognise this easily curable affection. We have seldom seen so thoroughly satisfactory a plate as that of the papular syphiloderm. The polymorphism, the gradual development from the macule into the papule, the colour, the grouping, and the localization, are all perfect, and yet are so blended as to convey a truly natural impression to the mind. Equally valuable is the fourth plate, that of lupus vulgaris. The serpiginous or exfoliative phase is shown rather than the ulcerating—that which tends to form cicatrices by a process of retrograde metamorphosis. The primary "red currant jelly" nodules so characteristic of lupus are seen at the margins of the patches, the

resulting scars in the centre. Dr Duhring bears constantly in mind in what the true value of such an atlas consists, viz., as a means of diagnosis for those whose opportunities of seeing large numbers of skin diseases are scanty, and the special diagnostic points are well brought out in the part before us. We need only add that the accompanying letterpress is well and carefully written, and fully explains the subject of each plate.

Research on the Effects of Inoculating the Lower Animals with Diphtheritic Exudation. By Drs H. C. WOOD and HENRY F. MORMAD. Supplement No. 7, "National Board of Health Bulletin."

THE experiments which are recorded in this "Supplement" were mostly made with a view to determine whether or not it is possible to produce diphtheria in the lower animals by the inoculation of the exudations from diseased human subjects. The results obtained differ considerably from those of Oertel and Freundenburg.

The first series of experiments consisted in the inoculation of thirty-two animals, chiefly rabbits, with human diphtheritic exudation. The membrane was placed in some cases beneath the skin, in others applied to the scarified mucous membrane of the mouth. Only six of the animals died, and in but one of these were there any diphtheritic-like exudations found in any of the organs. In this case there was an exudation upon the trachea, which presented some of the characters of a false membrane, but may have been due simply to a catarrhal inflammation.

Oertel states that micrococci abound in the blood of animals that die from the inoculation of diphtheritic exudation. The authors of this Supplement, however, state that they carefully examined the blood of the six animals that died, and in none did they find micrococci. They consider that the cause of death in these cases was not diphtheria, but tuberculosis, for in every case the internal organs were tubercular, often intensely so. In order to ascertain whether the diphtheritic exudation acted specifically in the production of tubercle, or merely excited a local inflammation which became the infecting foci, they inoculated nine rabbits with non-specific material; five of these died of tubercular infection. They also found that diphtheritic exudation, ammonia, and ichorous pus alike produced a pseudo-membranous trachitis when applied directly to the mucous membrane of the trachea. Microscopic examination showed no difference between the inflammatory products of diphtheritic and other irritants. From the results of their own and Freundenburg's experiments, they conclude that the formation of a pseudo-membrane in the trachea is not the result of any peculiar or specific process, but simply of an intense inflammation, an in-

inflammation which may be produced by any irritant of sufficient power. With reference to the view held by some pathologists that in croup the membrane separates readily, while in diphtheria with great difficulty, they offer the following anatomical explanation:—"The mucous membrane of the mouth and fauces has a squamous, not easily detached epithelium, and consequently membrane connected with or springing from such surface is adherent. The epithelium of the trachea is columnar, ciliated, and detached with the greatest facility even in normal conditions of the organ; hence membrane attached to it separates readily." We believe that confusion not unfrequently arises in the minds of both students and practitioners from not considering the different meaning attached to the term croup and diphtheria in clinical medicine and in pathological anatomy.

After giving a careful record of their interesting experiments, the authors indulge in some speculations regarding the nature of the diphtheritic poison. They suppose it to be of the nature of a septic poison which is also locally very irritant to the mucous membrane. It may excite an intense inflammation by a local action without absorption or after absorption; it may act locally by being carried to the mucous membrane by the blood. Again, they think it possible that the poison of diphtheria may cause an angina which shall remain a purely local disorder, no absorption occurring; or cold or some other non-specific cause may give rise to a simple local trachitis which may produce a specific poison. This becoming absorbed causes blood-poisoning, the case ending as one of adynamic diphtheria.

These theories, they believe, afford an explanation of the various clinical features of the disease and of the antagonistic opinions concerning the value of local treatment in diphtheria.

Surgical Lectures delivered in the Theatre of the Westminster Hospital. By RICHARD DAVY, M.D., F.R.C.S., Surgeon to the Hospital. London: Smith, Elder, & Co.: 1880.

THOSE who knew Richard Davy when a student in Edinburgh recognised in him not only an accomplished gentleman in the best sense of the word, but also a thinker and worker with not only industry, but originality, and above all ingenuity, which, after all, really means genius applied to practical detail.

This little book contains lectures or observations on eleven subjects, varying much in length, value, and importance, but all, so far as they go, full of originality both in matter and manner, and making a whole which is instructive and amusing also. The two most important, both in length and matter, are the first, on treatment of bad cases of club-foot by excision of wedges of bone, and

the last, on the use of "Davy's lever" as a mode of checking hemorrhage in amputation at hip-joint. All surgeons should study these papers with care and attention. The other papers are shorter and less original, but in each the careful reader will find something to instruct him, in all much to interest him, and in none a single word indicating egotism, quackery, or ignorance. A feature of the work is the manner in which Mr Davy inserts cases of others bearing on his own plans and observations. We hope, to quote his own preface, that the "interest felt in the pursuit of original research will prove some compensation for the indifference of public discrimination."

Anatomy, Descriptive and Surgical. By HENRY GRAY, F.R.S. Ninth Edition. By T. HOLMES, M.A. Cantab. London: Longmans, Green, & Co.: 1880.

A NEW edition of Gray's *Anatomy* is always welcome, and all the more so this time seeing that it appears in such an improved form. In the eighth edition there was a great falling off in the manner in which the woodcuts were printed. In the present case they stand out as fresh as ever, and the care which has been bestowed upon their successful reproduction is evidenced by the fact that the paper has all been previously rolled. In a book whose value depends so much upon its magnificent illustrations this is a matter of great importance. Beyond the addition of a few new figures, taken from the *Atlas of Histology*, by Klein and Noble Smith, there is very little alteration in the work.

The Descriptive Atlas of Anatomy. Containing 550 Figures. London: Smith, Elder, & Co.: 1880.

THE chief merit of this *Atlas of Anatomy* is its cheapness. If it lacks *quality* it has at least *quantity*. The work is published anonymously, but a glance will show that the majority of the figures have been borrowed from Heitzman, who, as is well known, drew largely upon the famous illustrations of Gray's *Anatomy*. In the present reproduction the drawings have suffered greatly. Their execution is coarse and rough in the extreme, and this is all the more to be regretted seeing that in the works from which they are taken they are both useful and suggestive. In the preface to the *Atlas* the following sweeping condemnation is made of the illustrations found in our various text-books:—"If he (*i.e.*, the student) endeavours to make use of the figures which 'embellish' the work he is reading, he is at once led into a maze of wonder and uncertainty," etc., etc. Is this not a most unjust criticism upon

drawings which, as a rule, are so much superior to those which appear in the *Atlas*? The accuracy of each figure in the work is vouched for "by a metropolitan surgeon and a successful teacher of anatomy in one of the chief London medical schools." We would ask this gentleman if it is customary to find the hypoglossal nerve running superficial to the mylo-hyoid muscle—*vide* page 86, figure 2.

The Pathology and Treatment of Venereal Diseases. By FREEMAN J. BUMSTEAD, M.D., LL.D. Philadelphia: Henry C. Lea: 1879.

THIS work is too well and favourably known to require much additional recommendation. The fourth edition has been revised, enlarged, and in great part re-written by the lamented author, in conjunction with Dr R. W. Taylor, whose labours in this department of medical science are well known.

Venereal diseases are divided into three classes—I. Gonorrhœa; II. Chancroid; III. Syphilis.

In speaking of gonorrhœa, the author states his opinion very decidedly that the disease may appear quite independently of contagion. He says, "Of one thing I am *absolutely certain*, that gonorrhœa in the male may proceed from intercourse with a woman with whom coitus has for months, or even years, been practised with safety, and this, too, without any change in the condition of her genital organs perceptible upon the most minute examination with the speculum. I am constantly meeting with cases in which one or more men have cohabited with impunity with a woman both before and after the time when she has occasioned gonorrhœa in another person; or, less frequently, in which the same man, after visiting a woman for a long period with safety, is attacked with gonorrhœa without any disease appearing in her, and after recovery resumes his intercourse with her and experiences no further trouble. The frequency of such cases leaves no doubt in my mind that gonorrhœa is often due to accidental causes, and not to direct contagion." It is well that this point should be prominently insisted upon, as a great deal of confusion and ignorance exist in the professional mind on the subject.

There is a chapter on stricture of the urethra, giving the latest information on the treatment of this affection.

In treating of the chancroid or simple chancre, the author believes that it is not dependent on a *specific virus* in the same sense that we attach to the word "virus" when speaking of syphilis or variola. "That it possesses a contagious element or poison is unquestionable; but we believe that this poison, under certain conditions, and especially when the products of simple inflammation have undergone decomposition and are inoculated upon persons in a

debilitated state, *is capable* of being generated *de novo*, and may then be transmitted to other individuals." We cordially endorse the author's view that the soft or simple chancre has nothing whatever to do with syphilis, and is in all probability the result of the inoculation of the products of *simple* inflammation.

The section on syphilis is very exhaustive, and up to the most recent advances in our knowledge of the subject. The chapter on the treatment of syphilis is the only part of the book we have reason to disagree with. The author refers to the non-mercurial treatment as expectant—a most unfounded assumption—and refers to its advocates as having a "vulgar prejudice" against mercury. A non-specific treatment may be wrong, but we cannot understand why it should be vulgar, especially as those practising it seem to be in a very small minority. The length of time recommended for the continuance of the mercurial treatment is "for at least two years or two years and a half." In our experience this is rather above the average duration of the disease when treated non-mercurially.

The belief in the specific action of mercury is, we fancy, not gaining ground, as its advocates now assert that they give the drug in small continued doses as a tonic. Non-mercurialists consider that other drugs have a more tonic effect in the treatment of syphilis than mercury, and have not the same danger of being deleterious.

This is, without doubt, the best standard work on venereal diseases in the English language.

The Nature and Treatment of Syphilis and the other so-called "Contagious Diseases." By CHARLES ROBERT DRYSDALE, M.D.
London: Baillière, Tindall, & Cox: 1880.

THIS little book is more a compilation of the views of others than a statement of the author's own experience, and is consequently rather disjointed in arrangement.

The author formerly treated syphilis without mercury with great success, but he somehow saw the error of his way, and now we regret to learn that he follows the prevailing fashion. The book may have its uses for those who care to skim a subject.

Medical Education and Practice in all Parts of the World. By H. J. HARDWICKE, M.D., Member of the Royal College of Physicians and Fellow of the Royal College of Surgeons of Edinburgh, etc., etc. London: J. & A. Churchill: 1880.

THIS volume, extending to 202 pages, with double columns, really

contains the information which the title-page promises. It must have cost the author a great amount of trouble. It is a useful guide for all entrants to the profession, those especially who contemplate settling in foreign parts. It will do good also indirectly by letting those schools whose education is defective see what other schools are doing, and so be the means of stimulating them to aim at higher things. To be informed, for example, that medical teaching in Japan is already treading on the heels of some of our British schools cannot fail to do good.

Psycho-Physiological Training of an Idiotic Hand. By EDWARD SEGUIN, M.D., Author of "Idiocy and its Treatment." New York: 1879.

The Asylum for Idiots, Earlswood, Red Hill, Surrey. 1879.

Eastern Counties Asylum for Idiots, Colchester. 1879, 1880.

Royal Albert Asylum for Idiots and Imbeciles of the Northern Counties, Lancaster. 1879.

Fifth Annual Report of the Committee for Darenth Schools and Asylum for Imbeciles. 1879.

Eighteenth and Nineteenth Reports of the Scottish National Institution for the Education of Imbecile Children, Larbert, Stirlingshire. 1879, 1880.

Reports of the Directors of the Baldoon Asylum for Imbecile Children, near Dundee. 1879, 1880.

Institution for Feeble-Minded Children, Frankfort, Kentucky. 1879.

Dr SEGUIN's paper, which stands at the head of our reviews, is a reprint from the *Archives of Medicine*. It is illustrated with four very expressive lithographs representing a healthy child of six months old, then the same child eighteen months old after convulsions, the idiot child seven years of age, and his improved appearance after a year's training.

Dr Seguin remarks that a study of this case shows that there are in idiocy muscular incapacities as well as intellectual ones; that the education of idiots should commence with the education of the senses, especially those of touch and sight; then the teacher begins the training of the hand from the shoulder, and movements which, starting from the elevators of the arm, involve successively the muscles of the arm and hand. The empire of the will is slowly extended from the rude exercises of the arm to the finer movements of the fingers; he is taught to discriminate and compare the impressions of the senses, and it is not until the brain is

roused by these methods, directed by a skilful teacher, that education as it is conducted in an ordinary school can take place. As Dr Seguin observes, he will be taught to read "when his senses will have conveyed to his mind more correct objective impressions. His store of ideas, of names, qualities, and actions, is yet too small."

Forty years have passed away since Dr Seguin opened his school for idiots in the Hospice des Incurables at Paris, and he has now the satisfaction of seeing the seed he has sown taking vigorous growth both in the old world and the new. As a proof of this we need look no farther than the reports quoted at the head of this review.

The thirty-second report of the Asylum for Idiots, Earlswood, shows that this excellent asylum is still keeping up its high character for effectiveness. In regard to results Dr Graham states that "of those discharged during the past year two are recorded as having recovered; one other male inmate had become very proficient at shoemaking, learned in the asylum; while several females were capable of rendering valuable service in needlework and domestic matters." He also states that "the young woman mentioned in the last report as having recovered continues to retain her situation as a domestic servant, and is much valued by her mistress."

In Colchester, one patient has improved so much that the medical officer is enabled to certify that he is no longer an idiot, and he is thus discharged recovered.

Dr Shuttleworth notes that four of his pupils were doing remunerative work in the institution when discharged. The following remark is worthy of reproduction:—"There can be little question of the superior fitness of out-door labour as a means of employment, whenever practicable, for a large proportion of the idiot and imbecile class. About the farm and garden there are a variety of simple but necessary occupations which patients of but limited capacity may efficiently perform. Satisfactory results have, indeed, been not unfrequently obtained by transferring lads whose progress in the workshops was not encouraging to one of these branches of labour. The improvement in the physical condition of some of the patients so transferred has been most striking. It is therefore a matter of extreme importance to maintain in connexion with the Institution, apart from mere considerations of profit and loss, an ample farm and garden. At the present time ten lads reside at the farm-house under the care of the bailiff and his family, and several of them render very efficient service."

From Darenth five have been sent out recovered out of twenty-one discharges. Two girls of these recovered patients have been retained in the asylum as domestic servants.

One lad educated at Larbert is recorded in a letter as earning his livelihood as a brushmaker.

At Frankfort, Kentucky, the medical superintendent states that the inmates "are doing all the work required about the Institution in carpentry, and also making and mending all the shoes used in the Institution, saving largely in annual expenditures in this direction, teaching the boys valuable trades, and enabling the management, in the course of a few years, to send out annually a class of competent workmen."

There are also other results of a less striking character recorded in the reports of the improvement of the children in intelligence, cleanliness, and orderliness, as also in reading and writing. Considering the feeble constitutions of idiots, the reports on mortality must be said to be low. The mortality at Lancaster is lowest, where it is 3·2 per cent.; Larbert comes next, being 3·7 per cent.; then Earlswood, 5·5 per cent.; Darenth, 7·2 per cent.; Colchester, 9 per cent.; and lastly, Baldovan, which is 10 per cent. It is fair to explain that at Darenth the medical superintendent is obliged to take all cases sent to him, whereas the other institutions have a certain power of choosing.

At Baldovan and Colchester, where the mortality is highest, there are no resident medical officers. The feeble-minded children of Kentucky cannot be feeble in body, since out of 140 children Dr Stewart has had only one death in eighteen months; but perhaps this is owing to there being two physicians in the house.

Cottage Hospitals, General, Fever, and Convalescent; their Progress, Management, and Work. By HENRY C. BURDETT, Member of Council and Fellow of the Sanitary Institute of Great Britain, etc., etc. London: J. & A. Churchill: 1880.

THIS is a second edition, rewritten and much enlarged, of a book which professes to contain all that has been said or can be said on the subject of which it treats. It is evidently the result of much enthusiasm, intelligence, and labour on the part of the author. He has had much to do with questions of a sanitary nature, and shows by means of careful statistics that small hospitals are a great boon in many villages and rural districts at a distance from larger institutions, not merely to the poor, but to medical practitioners and even country magnates themselves. The book is, of course, chiefly intended for those readers who contemplate the establishment of such cottage hospitals. They will find in it a great amount of accurate and practical information which will enable them to carry out their benevolent intentions without fear of disappointment. The volume extends to 550 pages, has an ample index and tables of contents, and is enriched with numerous plans and illustrations, and with a portrait of Albert Napper, Esq., the founder of cottage hospitals.

Le Cerveau—sa topographie anatomique. By Dr C. MOREL, Professor of Histology in the Faculty of Medicine at Nancy. 1880: Berger, Levrault, et Cie.

THIS work consists of seventeen plates of the human brain, with the necessary explanatory text appended to each. It has evidently been prepared with the sole view of guiding practitioners whose knowledge of cerebral anatomy has become somewhat rusty, in localizing lesions of the brain. As such it will no doubt prove useful, but it cannot be regarded as giving anything like an exhaustive account of the organ.

The drawings are taken from specimens which have been hardened in nitric acid. The great reduction in bulk which this method of preparation entails does not, in our opinion, render it a fit method to be adopted with brains from which typical drawings are to be taken.

Osteotomy; with an Inquiry into the Etiology and Pathology of Knock-Knee, Bow-Leg, and other Osseous Deformities of the Lower Limbs. By WILLIAM MACEWEN, M.D., Surgeon and Lecturer on Clinical Surgery, Glasgow Royal Infirmary. Pp. 180. London: J. & A. Churchill: 1880.

DR MACEWEN has operated on 367 limbs affected with knock-knee. In no case has he lost a patient from the operation. Several of the woodcuts in this book show the very excellent result that follows after the supra-condyloid operation, which method, devised by himself, he believes to be the best. After such an extensive acquaintance with knock-knee and other deformities of the lower limb, we must necessarily read with interest Dr Macewen's opinions on the causation of these deformities. He believes that rickets is the predisposing cause, and the weight of the body the exciting cause; that in knock-knee the shaft of the femur bends *inwards*, and that this is "one of the most important factors," "often it is the sole factor;" in other cases the shaft of the femur, along with the tibia, bends *outwards*, and bow-leg is the result; that rickets is a disease of the shaft and extremities, the pathological changes varying in intensity in different parts of the bones. In some cases the shaft, in some cases the extremities, are affected, hence the very different results that follow. Are there no cases of bow-leg which have nothing to do with rickets? Is the condition drawn in fig. 10 due to the same cause as the left leg in fig. 11? These are questions which must arise before we can accept Dr Macewen's theory of bow-leg. Fig. 2 is a schematized drawing of genu-valgum. In it we find the transverse axis of the knee-joint is *horizontal*; in it the femur seems to

be as nearly as possible a healthy femur, in which the shaft is even straighter than the normal femur. This is hardly in accordance with Dr Macewen's statement (p. 49), that "the most constant factor in knock-knee is an inward curve of the lower end of the femur." The shape of the condyloid extremity in the schematized drawing is also inconsistent with fig. 6, which is a longitudinal section of the distal extremity of a femur affected with genu-valgum. We mention these points to show that there are some difficulties still requiring elucidation before we can accept Dr Macewen's explanation of the aetiology of knock-knee. Chapter VII. is devoted to the history of osteotomy. Dr Macewen is an earnest follower of Lister's treatment, and believes that "what the subcutaneous principle did for tenotomy, antiseptics has done for osteotomy." After operating on a very large number of cases, he is fully justified in believing "that by a strict observance of antiseptics osteotomy may be performed with perfect immunity from inflammatory products, and a compound incision or fracture of bone may be regarded as a simple one." Dr Macewen's success seems to us to be one of the most important supports which Mr Lister's doctrines have yet received in the domain of practical surgery. Dr Macewen's remarks on the method of operating and the instruments used are worthy of the most careful consideration, and if surgeons adopt his method of relieving the deformity, they should take great care to follow his instructions to the letter. He is justified in asking this, when his invariable success is taken into consideration. There is one point which requires, in our opinion, reconsideration; he draws fig. 22, apparently a healthy femur, and describes on it his method of operation. It would have been better to describe the operation on a femur such as we have in fig. 24. If in a future edition Dr Macewen would mark on plate 24 the line of his incision, it would be of more use to practical surgeons than the marks given on fig. 22. The incisions in figs. 22 and 37 do not bear the same relations to the epiphyseal line. The same objection holds with regard to the transverse section (fig. 25), which is prepared from a "robust adult male." Dr Macewen sees little or no good in the other methods recommended in genu-valgum, and in some instances his criticisms are founded on the assumption that these operations are performed on healthy limbs. More especially is this to be noted in considering the relation of the incision or wedge to the epiphyseal line. His criticism of the division of the femur from the external aspect is also made from a consideration of the transverse section of a healthy femur. In knock-knee, is the transverse section of the femur above the condyles necessarily of the same shape as the healthy femur?

This book should be carefully read by every surgeon before he performs osteotomy in knock-knee. The most valuable portion of the work is that part which describes Dr Macewen's operation. The chapters on the causation of knock-knee, and the criticisms

on the other methods of operating are not, in our opinion, of such value. It may be that Dr Macewen's method will ultimately turn out to be the best. In the meantime it is not proved, although there can be no doubt of this, that Dr Macewen's great success, of which he and the Glasgow school of surgery have very great reason to be proud, must weigh greatly with surgeons in coming to a conclusion on the best way to relieve a distressing and common deformity, to which so many of the poorer classes in our large manufacturing centres are subject.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LIX.—MEETING X.

Wednesday, 3d November 1880.—Dr P. H. WATSON, *President, in the Chair.*

THE minutes of the previous meeting were read and approved of.

I. *Dr Macgillivray* showed two specimens of EPITHELIOMATA removed from the face. These, he said, were so far interesting as showing how much could be done, even in old people, to prevent disfigurement after removal of considerable portions of the face for this disease. The first case was one of a man aged 76, who had suffered for long from epithelial disease of the left half of both lips, the angle of the mouth, and extended back affecting the buccal mucous membrane for two inches. A large triangular gap was left after removal. This was completely closed by dissecting up a large flap from under the chin. The patient made a good recovery, and had now returned home with hardly any appreciable deformity. The other patient was an old Irishman, also aged 76, from whom, two months before admission to hospital, an epitheliomatous tumour had been removed from the cheek. This had rapidly reproduced itself, and formed an ulcerated surface of an inch and a half in diameter, with a hardened base, situated over and adherent to the anterior surface of the left superior maxillary bone, and penetrating the buccal mucous membrane. This was removed by means of an incision extending from the angle of the mouth almost to the malar bone, joined by a second parallel to the infra-orbital edge, and by a third from the angle of the eye downwards by the side of the nose, joining the first incision about three-quarters of an inch from the angle of the mouth. By means of a chisel an opening was then made into the antrum just behind the

canine tooth, and with a narrow saw the whole of the front and external wall of the antrum was removed with the tumour attached. This left a gap the size of the palm of the hand, which appeared at first quite impossible to fill up by any plastic operation. A very large flap, however, having been dissected up from over the inferior maxillary bone and submaxillary region, this was twisted upon itself, and was found completely to fill up the gap. The angles of the resulting wound were then drawn together by means of hare-lip needles, so that there was only a raw surface of about three-quarters of an inch in diameter over the inferior maxillary bone requiring to heal by granulation. In this case, as in the other, complete union by first intention took place, and there now remained only a small granulating surface, which was rapidly contracting. In both cases fishing-gut sutures were employed, and were found to be most satisfactory.

II. *Dr Wyllie* brought under the notice of the Society an easy method of making OPHTHALMOSCOPIC DRAWINGS OF THE FUNDUS OCULI. The method consisted in getting lithographed the general red colour of the fundus, and afterwards painting with water-colour upon the lithographed surface. The lithographer had been made to copy accurately the various shades of red given by *Liebreich* in his *Atlas*. *Dr Wyllie* showed the Society twelve drawings that he had made after this manner. Lithographed charts, each containing nine lithographed circles, could be obtained from the *Messrs Waterston*, 60 Hanover Street, at twenty-six shillings a hundred.

III. *The President* showed an ARM which he had, on the previous day, amputated at the shoulder-joint on account of the limb being a deformed and useless appendage. The purpose he had in view in showing it was to demonstrate the complete fatty degeneration of the muscular structures, which was so absolute as to leave no vestige of muscular tissue to the naked eye nor to microscopic examination. The appearance was like that of the muscles in pseudo-hypertrophic paralysis. The lad had in childhood sustained a severe burn of the arm and side. The parts had sloughed extensively. In the region of the elbow, and as high as the insertion of the deltoid, and as far as half-way down the forearm, the entire circumference, where not covered with a granulating surface, was composed of cicatricial tissue. He had seen the patient for the first time nearly two years ago, and had then recommended amputation. The lad had returned home temporarily, but, on coming to Edinburgh and finding *Dr Watson* abroad, he had been placed under the care of some one else, who had tried what extensive removal of the lower part of the humerus would do to promote healing. Since then the arm had never entirely healed. The continued discharge was beginning to tell unfavourably on the lad's general health, and he had, a few days since, been

brought to Edinburgh and placed under Dr Watson's care, that the amputation might be performed. This operation was practised by a circular incision on the level of the folds of the axilla which divided the skin and cellular tissue, together with a linear incision identical with those made for the ordinary operation of excision of the head of the humerus. The articulation having been opened, and the head and neck of the bone cleared, the remaining soft parts were cut through from the bone backwards. Dr Watson believed that this plan of operation was originally recommended and practised by Professor Spence.

IV. *Mr Chiene* showed a DRAWING of a peculiar disease known as "AINHUM," which occurs among the negro race in Bahia. At Mr Chiene's suggestion, the President requested Dr Paterson of Bahia, who was present at the meeting, to describe the disease to the Society. Dr Paterson described it as a peculiar disease affecting the little toe, and in some instances the fourth toe. It began as a cicatricial contraction of the skin at the root of the toe, and this gradually increased, causing atrophy of the subjacent parts, until it brought about a solution of continuity in the bone. Ultimately the toe hung by a mere pedicle, which could easily be divided with the scissors.

V. *Dr Byrom Bramwell* showed (1.) PHOTOGRAPHS OF A CASE OF CYCLOPEAN MONSTROSITY. He met with it many years ago, when in general practice. The patient had borne five healthy children previously. Her sixth pregnancy terminated at the end of the seventh month, with twins. One child was naturally formed; the other was the monster. The child was well formed otherwise. Dr Bramwell had unfortunately no opportunity of making a dissection. The child lived a quarter of an hour. (2.) A series of GRAPHIC REPRESENTATIONS OF SOUNDS AND MURMURS, the distinctive feature of which was that the normal time relations of the sounds and silences on the cardiac cycle were preserved. In the previous representations with which he was acquainted the cardiac sounds were jointly represented by a line, the time relations not being shown.

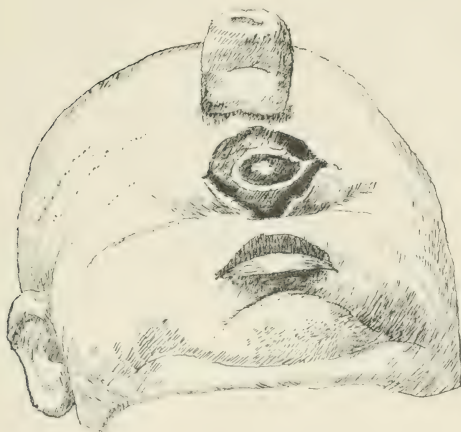
VI. *Mr Annandale* then read his paper on THE RADICAL TREATMENT OF HERNIA WITH THE AID OF CATGUT AND LISTERIAN ANTISEPTICS, which appears at p. 488 of this Journal.

Mr Chiene believed that Mr Annandale was right in tying the neck of the sac. The natural tendency to cure in a hernial sac was by contraction of the neck. This was seen to occur, even to complete closure, in cases in which a truss had been worn. Mr Chiene had tied the neck of the sac in operating for strangulated femoral hernia. He had not found it necessary to cut away the sac. In operating for congenital inguinal hernia he had not thought it advisable to tie the neck, for fear of injuring the cord,

Dr. Byrnes Dransell's case of

Cyclopean Monster.

(from photographs.)



Front View



Side View

which is closely incorporated with the sac in congenital hernia. Mr Chiene asked if the surgeons present had met with cases in which the bowel was adherent to the sac.

Dr W. A. Finlay said he had the good fortune to be present at the operation in one of the cases related by Professor Annandale, and had the pleasure of watching the most satisfactory progress which the patient afterwards made. It was one of those cases in which a considerable portion of omentum was removed. Mr Syme used to teach that the removal of a piece of omentum in operating for hernia was apt to induce inflammation and also ulceration of the intestine. Dr Finlay thought that the course which Mr Annandale's cases ran sufficiently proved that now there is no risk to speak of of inflammation following this procedure, but he would like to ask if ulceration of the bowel had been observed as an after consequence of removing omentum.

The President remarked that he felt sure the Society was much indebted to Mr Annandale for bringing this subject under the notice of the Society, and originating so interesting a discussion on this long-debated matter of radical operations for hernia. He had grave doubts of the utility or necessity for any operation in a case of redicible hernia, because—(1.) A well-fitting truss usually secured sufficient support to do all that was required. (2.) After any so-called radical cure a truss was always required, as was abundantly proved by the statements of the London Truss Society. (3.) Even when a truss failed to prove retentive, such rest in the recumbent posture as provided for spontaneous contraction of the neck of the hernia, to which Mr Chiene had alluded, would secure everything which a radical operation practically could afford. He had at one period in his practice adopted all the more modern methods of radical cure. He had even himself recommended a new method of treatment in cases of large umbilical hernia. But latterly he had come to regard all the multifarious devices for procuring a radical cure as having one principle in common, through the practical operation of which he believed it was that they alone did any good, and that was that they secured the quiet rest of the patient in bed for a period of about six weeks. Some years ago he had put this view to the test of practical experiment. A patient was sent to his care, the butler of a nobleman, who suffered from a very large scrotal rupture, within the sac of which was contained all the movable parts within the abdomen. The contraction of the abdominal walls, from the continued protrusion of the whole contents, rendered the reduction of the mass a matter of difficulty and its retention an impossibility. When returned, on invaginating the scrotum the whole hand could be passed within the internal abdominal aperture. The patient was placed in bed, on a very restricted and dry diet; the scrotum was slung, and the foot of the bed raised so as to afford every inducement to the hernial contents to gravitate back into the abdomen. They did so, remaining there, and the inguinal opening

contracted in the period of six weeks so that the forefinger could alone be passed within the inguinal openings. The use of a well-fitting truss secured the easy retention of this protrusion in the future. As regards the use of an operation for radical cure of hernia, there could be no objection to the adoption of some such procedure, in his opinion, in cases of irreducible hernia, after the sac had been opened and either the contents returned or the adherent or thickened omentum cut off. He had done so, stitching up the internal opening and inguinal canal in all the cases where he had cut away masses of omentum, notably in the two cases from which he had, during last session of the Society, showed the omental masses removed. As to stitching up the opening in incarcerated hernia after opening the sac, to that, too, there might be no objection; but in cases of strangulation of the contents he thought it, if not a dangerous, certainly an imprudent suggestion, as the inflamed condition of the parts, though fit enough to return, might render a possible escape of inflammatory, it might even be faecal, products most desirable through the line of the sac, which closing the neck of the sac could only prevent. He should not, therefore, wish it to go forth as a suggestion approved by this Society, that this stitching up of the sac should be adopted as a recognised part of the operation of cases for strangulated hernia. As to the operation itself recommended by Mr Annandale, it seemed nothing more than the old modification of the punctum aureum effected with catgut instead of wire, plus the removal of the *whole* sac. But as Schmucker cured two cases of irreducible ruptures free from strangulation by cutting away the body of the sac after tying its neck, the use of antiseptic gut and Listerian antiseptics might be stated to constitute the essential peculiarity of this proceeding. But even this had been already recommended and practised by Nussbaum and Albert. As regards the catgut, he doubted if it would be found as advantageous as fishing-gut for this purpose. He had now employed fishing-gut in several cases in these operations for closing the mouth of a hernial sac, and with perfect success; and as regards Listerian antiseptics, as far as his own practice went he found a greater degree of success attend upon the employment of a dressing composed of boracic lint in the form of pads and fillets, marginally moistened with carbolic oil and supported by thick layers of salicylic cotton, along with worsted-skein drainage and the use of the spray, than he had been able to secure by means of the gauze and waterproof of the more regularly formulated so-called Listerian system. There was one point in Mr Annandale's description which he confessed he had failed quite to understand. That was the excision of the sac. In a small hernia, to excise the sac could not be a matter of any difficulty, especially in the femoral region; but in the case of a large scrotal hernia, and still more in a congenital scrotal hernia, where the sac was the cavity of the tunica vaginalis, and, of course, closely attached to the anterior and

lateral aspects of the testicle, it seemed to him anatomically impossible to dissect out the whole sac. In his own practice, in occluding the abdominal opening, cutting across the neck of the sac and stitching the sac and surrounding parts together so as to occlude the aperture had been all he had ventured upon or considered necessary. As regarded the condition of adhesion of the intestinal contents of a hernial sac, to which reference had been made by Mr Chiene, he had found the bowel occasionally adherent to both the sac and the omentum; and so much was this latter fact recognised by him as a contingency, that in cutting away omentum in a case of irreducible hernia he was always careful to dissect into its interior, to assure himself that there was no adherent intestine wrapped up in it, before proceeding to transfix its base by a double ligature.

Dr Finlay said he was aware that it was in the operation for strangulated hernia that Mr Syme disapproved of the removal of omentum, but thought that the objection would equally apply to the procedure in operating for the radical cure of hernia, inasmuch as the bowel is deprived of part of its omental covering in both cases. He had himself, in operating for strangulated femoral hernia, removed a considerable portion of omentum which could not be reduced. The patient did not in any way suffer in consequence, and made an excellent recovery.

Professor Amundale thanked the Society for receiving his paper so kindly. In reply to Mr Chiene's two questions, his answers were, that he had met with a case in which the gut was adherent to the sac, and he had also operated upon congenital herniæ; and although there was considerable difficulty in separating the constituents of the cord from the sac, he had with time and patience succeeded in doing so. He thanked the President for his kind criticisms; and in answer to Dr Watson's remark that it was not advisable to perform the operation in all cases of strangulated hernia, as there was a risk of preventing the escape of fecal matter should the gut give way, he reminded the members of the Society that he distinctly stated in his paper, that he (Mr A.) only advocated his operation when the gut was in a proper condition to be returned. In answer to a second remark of the President's, that he (Dr Watson) would not wish it to go forth to the profession that the Society approved of rash operative interference, Mr Amundale again reminded the Society that in his paper he only advised the operation in "reducible" hernia when every other means had failed; and if he had met with a case of large reducible hernia such as referred to by Dr Watson, he would certainly have adopted similar means before attempting any operative interference. The President had referred to the use of ordinary fishing-gut as a suture. He had been lately trying it, and found that it was not absorbed; and although it might not cause any irritation if left in the tissues, he preferred well-prepared catgut, as there was no advantage gained by sutures remaining when the wound was

healed. Dr Watson had also described his method of dressing wounds. He would not at the present enter into a discussion on this subject, but would only remark that such a plan was not according to true Listerian antiseptics.

VII. Mr Chiene then read his paper on BLADDER DRAINAGE, which appears at p. 516 of this Journal.

Dr Cotterill wished to ask whether Mr Chiene considered the use of the ordinary gum-elastic catheter free from disadvantages in these cases, as he had seen instances of their being much altered, and even broken off at the end, where they had been left in the bladder for some time. He also suggested that the plan recommended by Mr Chiene for clearing away a plug of mucus from the instrument might not succeed under all circumstances.

Dr A. G. Miller remarked that he thought Mr Chiene's method was eminently qualified, not only for those cases to which Mr Chiene had referred, but also to many others. The apparatus seemed to be quite perfect, whilst at the same time very simple.

Dr Sinclair felt much interested in Mr Chiene's paper. He thought that a similar method could be made applicable in the treatment of other diseases than that of drainage of the bladder. He had read of a case related by an American physician, although he was unable at that moment to recall his name, in which the drainage of an empyema had been successfully carried out by a somewhat similar method, the patient having the extremity of a drainage-tube constantly kept in a bottle of water. This case occurred before the days of antiseptics, and was devised to prevent the then bugbear of air entering the pleural cavity.

Dr Ronaldson asked how Mr Chiene ascertained when the eye of the retained catheter was just inside the bladder and no further; whether difficulty were ever experienced from the incrustation of phosphates on the end of the catheter interfering with its subsequent withdrawal; and whether Mr Chiene had ever tried his method of bladder drainage in the female.

Dr Baist had listened with great pleasure to the paper. He agreed with Dr Miller that the plan might advantageously be extended to other cases. He thought it would be of great service in cases of retention requiring a prolonged use of the catheter, as in enlargement of the prostate, and also in cases where from malignant disease it was unadvisable to remove the instrument frequently owing to the presence of ulceration. He thought it would be of special value in cases of rupture of the membranous portion of the urethra from injury, where there was no external wound, and where there was danger of extravasation of urine. He could recall three such cases. In the first it was found impossible to pass a catheter. Perineal section was performed, and the instrument was introduced through the wound. The case did well. In the second case a winged catheter was introduced easily, and left in the bladder.

The case progressed favourably for a day or two, and then extravasation occurred from the urine finding its way into the cellular tissue along the side of the instrument. In this case also perineal section was performed, and the patient ultimately recovered. The third case he had seen recently, and sent into the Infirmary under Mr Chiene's care. This patient recovered in a few weeks, but he did not know under what treatment.

Dr Byrom Bramwell said he agreed with Dr Miller in thinking that this method of bladder drainage was capable of wider application than Mr Chiene had indicated. It was now several years since Mr Chiene had described the method to him and had shown him the apparatus at work. Personally he had not had much experience of it, but he had tried it in a case of incontinence of urine following spinal disease, and could testify to its advantages. He thought it would prove extremely useful and most comfortable to the patient in cases of that sort and in cystitis arising from other than surgical causes.

The President was grateful to Mr Chiene for introducing a practical exposition to the Society of a method of treatment of which he had in some cases a high opinion. This method must not be confounded with that of simply tying in a catheter. From this old procedure it differed by acting on the syphon principle, and in excluding by antiseptic measures atmospheric contamination. His first acquaintance with this syphon method of draining the bladder was made in 1863, when he was consulted about a gentleman with enlarged prostate, retention, and extreme vesical irritability. There was a difficulty in passing an instrument, and sometimes a difficulty in securing medical aid. In these circumstances the patient himself devised the syphon principle of drainage for his condition, and insisted strongly on the presence of several coils of indiarubber tube in the bed, as well as several in the vase in which its end terminated. He was much interested in Mr Chiene's remark about the patient recognising at once the arrest of the drainage, as in this old gentleman alluded to such arrest always wakened him, while he slept tranquilly while the drain went on. As to the catheter, as such instruments could be obtained with a terminal aperture instead of a lateral eye, there was no need for the instrument projecting within the bladder so as to occasion any irritative pressure. He had found in these cases that the best way to tie in a gum-elastic catheter was to attach a silk thread round it by tightly tying it somewhere on the stem, and then passing the thread through a ring of silver wire passed through the root of the frenum of the prepuce by means of a surgical sewing-needle, and worn there while the use of the catheter and drainage was required. He found that the best means of tying in an indiarubber catheter was to have a straight metal catheter through which it passed, and which, when the instrument was lodged in position, occupied the pendulous portion of the urethra.

The "eyes" of this shielding silver catheter slipped up and down the outer surface so that they might correspond to the orifice of the urethra, and thus be tied to the silver ring introduced through the root of the frenum as already described. He did not, however, much affect indiarubber catheters, as when in continued use they became both longer and larger, sometimes to an inconvenient degree. He could corroborate all that Mr Chiene had said as to the utility, advantage, comfort, and safety of this system of syphon drainage of the bladder, and, except in cases where the fistula was maintained by such loss of tissue as precluded healing, he was confident no one would fail of obtaining most successful results. He might mention that he had in one case retained the catheter with the antiseptic drain for eight weeks without inconvenience.

Mr Chiene thanked the Society for the way in which his paper had been received, and the Society adjourned.

Part Fourth.

PERISCOPE.

MONTHLY RETROSPECT OF OBSTETRICS AND GYNÆCOLOGY.

By ANGUS MACDONALD, M.D.

ON THE OPERATIVE TREATMENT OF CANCER OF THE CERVIX COMPLICATING PREGNANCY.—The above is the subject of a contribution in the *Zeitschrift für Geburtshülfe und Gynäkologie*, Vol. v. s. 158, by Dr Richard Frommel of Berlin. His observations are suggested by two cases of the complication, the histories of which are given at some length. The cases were severe, the affection having dated back to a period before conception in both. In the first, as natural delivery was plainly impossible, Cæsarean section was performed with antiseptic precautions. A deeply asphyxiated child was delivered, which, however, came round and lived for three months. The placenta and membranes, being adherent, had to be removed, and a drainage-tube was then introduced through the vagina and cervix. The uterine wound was closed by seven deep and several superficial silk sutures. The patient died in two days. On post-mortem examination it was found that the silk stitches had all come loose. The carcinoma was very extensive, affecting the cervix to the os internum, the parametria on the right side, the bladder and upper part of the vagina, and completely filling the entrance of the true

pelvis. In addition there was hæmorrhagic peritonitis, interstitial Bright, and commencing endocarditis. The second case came under treatment five days after the waters had come away. The child was then dead, and the presentation a cross one. That being so, an attempt was made to remove manually the degenerated tissue so as to open a channel for the extraction of the child. This was effected without injury to adjoining organs or any bleeding worthy of the name. A foot was pulled down, and the dead, slightly macerated, full-grown child delivered. After this there was only very slight bleeding; the placenta was removed by expression, and the uterus contracted fairly. The operation was well borne by the patient, and she continued tolerably well for a few days. She suffered greatly from pain, for which large doses of narcotics were administered, and lived for a fortnight, during which time rapid advance of the carcinoma was observed. No post-mortem could be obtained. The author then proceeds to discuss the question when and by what sort of operation carcinoma, when complicating pregnancy, ought to be dealt with. This he holds depends chiefly upon the degree of advance of disease. Provided the case be seen at a time when the whole diseased tissue can be removed, the author recommends this to be done irrespective of the stage of pregnancy or of the risk of abortion resulting. He maintains, however, that the latter is not likely. But if the extent of the disease is such as to render its complete removal impossible, Dr Frommel recommends Cæsarean section with antiseptic precautions, in the interests of the child chiefly, provided the fœtus is alive and viable. But if the child be dead, he would follow the plan of treatment adopted in his second case. In discussing the question of diagnosis of early cancer, the author considers Spiegelberg's view in regard to the fixation of the mucous membrane to the subjacent tissues as doubtful, since Ruge and Veit have shown that carcinoma of the cervix has only seldom those ingrowths of epithelial tissue assumed by Spiegelberg to be present in all cases. He comes to the conclusion that accuracy of diagnosis can only be obtained by removing a small portion of diseased tissue and subjecting it to microscopic examination. The operative interference for complete removal he recommends is the wedge-shaped excision of both lips of the os after Simon's method.

ON LACERATIONS OF THE NECK OF THE UTERUS.—Dr Jackson of Chicago, in an article in the *American Practitioner* for July, deals fully with this subject. Going on the lines laid down by Emmet, he accepts as the pathology of the majority of so-called "ulcers of the womb" cervical laceration with ectropion of the lips of the os, and resulting irritation of the cervical canal from exposure to the acid secretions of the vagina. In reply to those who object to this explanation, he simply advises them to

look for the condition and they will find it. For physical diagnosis he points out the difference noticeable when the patient is on her side and when in the knee-elbow position. In the latter the apparent lengthening of the cervix due to the prolapse of the womb disappears from the ascent of that organ lifting it high out of the vagina, and the apparent ulcer disappears, or nearly so, from the inrolling of the lips of the os. To complete the demonstration, slight traction on hooks fixed into the edges will bring the exposed surfaces in apposition and render the appearance normal. He then describes the steps of Emmet's operation, and advises the passing of two preliminary threads, an anterior and a posterior, for the better command of the cervix. The needle he uses is a rectangular one with a very strong short shank affixed to a handle. Instead of an eye, there is on the edge of the flattened blade, near the point, a notch, into which, after the tissues have been pierced, a loop of the suture is placed and the needle then drawn back.

ON THE ALBUMINURIA OF PREGNANCY, by Alfred L. Galabin, M.D.—In a paper on the above subject in the *British Medical Journal* for 30th October 1880, attention is drawn to the fact, that abroad albuminous urine in connexion with pregnancy seems more common than in England, the proportion from several statistics being—before labour 1 in 7, during labour 1 in $4\frac{1}{2}$, and shortly after labour 1 in 4; while in England nothing like such frequency has been observed, though observations are still wanted. From the fact of delicate tests having been necessary to determine the presence of albumen in many of the quoted cases, the author assumes that cystitis may have accounted for some of them. He draws attention to the fact, that from this temporary albuminuria permanent Bright may be set up, as in a case given where six pregnancies, notwithstanding every therapeutic precaution, were all attended with albuminuria, and all ended in premature still-birth, while in the intervals the urine was free from albumen, and where the patient ultimately died of chronic Bright. As to theories of causation, the writer gives seven, but contends that no single cause is sufficient. Those mentioned are—*1st*, Increased venous tension in the kidneys from pressure on the renal veins. *2d*, Increased arterial pressure resulting from hypertrophy of the heart due to pregnancy. *3d*, The variations in tension caused by the contractions of the uterus, most marked, of course, during labour. *4th*, The tendency to active hyperæmia of the kidneys due to the close nervous connexion between them and the uterus. *5th*, Mechanical effect of pressure, not only on the vessels, but on the ureters, greater in primipara on account of the greater tenseness of the abdominal walls. *6th*, and most important, The extra strain thrown on the kidneys during pregnancy through their having to do work both for mother and fetus; and the author suggests that

some of the little-known waste products excreted during pregnancy may be of a highly irritating character. 7th, M. Gubler's theory of supralbuminosis, which, however, the author entirely rejects, as, were it true, death of the fetus must lead to albuminuria, which is not the case. Thus we may have albuminuria limited to the active stage of labour from pressure merely; or, in addition to this, and acting also before the onset of labour, we may have interference with the functions of the kidney cells, and retention of the products of excretion, both fluid and solid, leading to œdema from the former, and convulsions, or their premonitory symptoms, from the latter; while from a further combination of causes actual chronic Bright's disease may be set up. He then goes on to agree with Spiegelberg, that in the great majority of cases uremia is an essential factor in the causation of convulsions. He records one case of severe puerperal convulsions in which there was no albuminuria throughout, and three others in which albumen appeared in small amount only after several fits had occurred. Two of these patients, however, showed an epileptic tendency. To account for those cases where the albuminuria was subsequent to the eclampsia, he advances Dr Hicks's three suggestions, along with one of his own—1. That the convulsions are the cause of the nephritis. 2. That both are due to the same cause. 3. That the venous congestion produced by the eclampsia is the cause. He gives as a possible explanation that albuminuria may not be the earliest symptom of kidney disease, and that thus the nephritis may have existed before the eclampsia. The author then combats and rejects entirely the Traube-Rosenstein theory of the transudation from the brain vessels producing cerebral anæmia, and in that way eclampsia. Dr Galabin concludes by asserting his belief that no single cause will account for the occurrence of albuminuria in pregnancy, whilst he lays particular stress upon the increased irritability of the nerve-centres, which occurs physiologically in order to fit them for carrying on the reflex mechanism of labour, as rendering them more sensitive to the action of retained excretions and other causes of eclampsia.

ON THE RENAL AFFECTIONS OF PREGNANCY, by Möricke of Berlin (*Zeitschrift für Geburtsh. and Gynäkol.*, bd. v. hft. I).—Here the author insists on circulatory disturbances, back pressure, etc., as the starting-point of most of the kidney inflammations occurring during pregnancy, and in support he asserts that while in ante-partum albuminous urine few or no casts are found in the first passed urine, post-partum the casts are numerous and large, having been, he says, washed out by the rapid rush of blood following the relief of abdominal tension. He gives as the frequency of albuminuria during labour nearly 1 in 2. In support of his position he analyzes his observations of 100 cases, and also adduces the greater frequency of albuminuria in primiparæ, and its almost

universal occurrence in cases of twins. He quotes, too, the experiments of Frerichs, where albuminuria with casts was found to follow in a few hours loose ligature of the renal vein. Believing in the etiological importance of increased tension within the abdomen, he advocates the induction of premature labour, more especially seeing that the majority of the children are still-born.

THE MECHANICAL TREATMENT OF CYSTOCELE AND PROCIDENTIA UTERI, by E. G. Gehrung, St. Louis (*American Journal of Obstetrics*, July 1880, page 513).—After considering the various causes of this affection, the author lays particular stress on flexions as the starting-point of prolapse. Quoting as a universally accepted maxim "that procidentia is impossible as long as the bladder retains its normal position," he states as a corollary "that if the bladder can be returned and held in its natural position, the procidentia, as such, must be cured." He then shows that retroversion pessaries, which trust for their fixed point to the anterior vaginal wall, are inapplicable for prolapse, and can only relieve it by blocking up the exit of the pelvis. He advocates the use of the peculiar "anteversion pessary" which bears his name. This finds its support laterally and on the extreme lateral parts of the perineum or its remains. It holds the anterior and lateral walls of the vagina in their normal position, and cystocele being thus impossible, so also of necessity is descent of the womb. To prove that the action of this pessary is not merely one of mechanical obstruction, he adduces the fact that in cases treated by its use smaller sizes of the instrument are in course of time required. After giving a description of the pessary, of how to alter it to suit special cases, and of the mode of its introduction, he reports a series of cases in which this line of treatment was followed by good results. In most of the cases he packed the vagina round the pessary, for the first few days, with cotton-wadding covered with tannin powder.

ATRESIA OF THE GENITAL PASSAGES OF WOMEN, by Edward Jenks, M.D., Chicago (*The Chicago Medical Journal and Examiner*, Sept. 1880.)—After a full and long article on the above subject, with reports and analysis of 17 cases of the kind, the author sums up as follows:—I. As fatal results have followed operations for the simplest varieties of atresia, the surgeon should apprise the patient or her friends of every possible danger prior to operating. II. In case of menstrual retention from vulvar vaginal or uterine atresia, the fluid should not be evacuated *via* the rectum with a trocar, but in the route pursued by the vagina. III. When there is reason for believing that there is a large quantity of menstrual fluid distending the uterus or Fallopian tubes, the safest mode of evacuating it is by means of an aspirator prior to any surgical procedure for the cure of the atresia. IV. The evacuation of menstrual fluid

should never be through a small orifice (with the exception of aspiration), but through a free opening, after which the vagina and uterus should be thoroughly washed out with warm water as the best means of preventing or curing septicæmia or inflammation. V. Septicæmia, inflammation, and rupture of the Fallopian tubes are the chief disasters attending atresia or following operations for its cure. VI. Congenital atresia of the vagina can be best relieved by tearing with the finger, as the rudimentary canal already existing serves a similar purpose to the surgeon that an instrumental direction does in cutting operations; but the accidental forms require cutting, for which operation scissors are preferable to the knife. In some cases both cutting and tearing are requisite. VII. There is reason for believing that when there is an accumulation of menstrual fluid within the vagina and uterus, particularly within the latter, the best time to operate is immediately prior to the menstrual date, as the patency of the newly-opened canal is thus better ensured. VIII. Notwithstanding the dangers attending these operations, there is good reason for believing that by care and caution, and with a proper use of antiseptics, favourable results may be expected from operations for either congenital or accidental atresia.

MONTHLY REPORT OF THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

BASIL AS AN ANTHELMINTIC.—Dr Lemnos of Buenos Ayres, applying to basil (*Ocimum basilicum*) the term *albahaca*, states that its juice is a rapid vermifuge. The use of the remedy is further advocated on the ground that it does not cause any disorder of the alimentary tract if worms be absent. About 50 grams of the juice should be administered, followed in two hours by a small dose of castor-oil. The results obtained from this remedy are as marked as those from calomel, santorin, kousso, and pamala. (*Pharmaceutische Zeitsch. f. Ausland*).—*The Practitioner*, November 1880.

EUCONYMIN IN THE TREATMENT OF PSEUDO-MEMBRANOUS COLITIS.—According to *la France Médicale*, Dr Blondeau brought before the Société de Thérapeutique recently a case in which he had employed euconymin in one of his patients suffering from pseudo-membranous colitis, which had been vainly treated by the most energetic remedies. He prescribed euconymin 0.05 grams (grain $\frac{3}{4}$), extract of hyoseyamus 0.10 gram (grain $1\frac{1}{2}$), made into two pills, one to be taken morning and evening. After six days of this treatment the patient had regular motions and recovered her health, which she had lost for some months.—*Medical and Surgical Reporter*, October 9, 1880.

THE PHYSIOLOGICAL ACTION OF CONIUM MACULATUM.—In a communication to the French Academy of Sciences in 1879, Drs Bochefontaine and Tiryakian expressed their opinion that *Conium maculatum* contained two active principles endowed with different properties, conine, conicine or cicutine, paralyzing the central nervous system, and the other acting almost like curare. A salt prepared from hemlock by M. Mourrot, hydrobromate of conine, gives results similar to those of conine. Dr Bochefontaine has recently, through M. Gosselin, presented a further note on this subject to the Academy of Sciences (*la France Médicale*). According to this, conine is absorbed by the mucous membrane of the digestive organs, for after having been given in solution to several individuals it caused general weakening and disappearance of violent pain in the stomach. Conine diminishes or abolishes the physiological properties of the nervous centres before acting like curare on the nervo-muscular connective substance (Vulpain). Dr Bochefontaine thus summarizes the comparative action of hemlock and curare:—Hemlock may act like curare, but it produces, besides, physiological effects not observed in animals under the influence of curare.—*Medical Press and Circular*, November 3, 1880.

SUBCUTANEOUS INJECTION OF ETHER IN SCIATICA.—Dr Comegys, in *l'Union Médicale*, 5th August 1880, recommends hypodermic injection of sulphuric ether for the treatment of sciatica. He cites two cases, one in detail, which he has cured by this plan. Three drops of ether are injected at intervals of twelve hours. The injection need not be a deep one; and though it causes a momentary sharp pain, it does not bring on any consecutive unpleasant effects. Dr Comegys is inclined to think that the same injection might be successful in the case of tic douloureux, for which Dr Marino recommends hypodermic injection of ergotine.—*Medical and Surgical Reporter*, October 9, 1880.

OIL OF EUCALYPTUS.—Dr Siegen of Deutz narrates some of the results he has obtained from the use of the oil of *Eucalyptus globulus* in antiseptic surgery. He was induced to experiment with it at the suggestion of Professor Binz, and since 1872 has carried on his investigations of its antiseptic properties. He prepares the solution of the oil by dissolving 3 grams in 15 grams of alcohol, and diluting with 150 grams of water. In this solution he soaks ordinary gauze. This dressing is applied in the wet state, covered with the usual gutta-percha tissue, and the whole kept in position by means of gauze bandages. Thus prepared, the eucalyptus gauze does not appear to irritate or produce eczema even upon a sensitive skin, and is perfectly antiseptic. Dr Siegen has employed this dressing with excellent results on several occasions. In one case of purulent inflammation of the elbow-joint, resection was performed under the thymol spray, and after washing out the wound with an

8 per cent. solution of chloride of zinc it was dressed with thymol. The discharges from the wound remained, however, offensive and profuse, whereupon the eucalyptus dressings were employed, the surfaces being first washed with a 1 per cent. solution of permanganate of potash. After the first dressing the secretion of offensive pus ceased, and the wound healed rapidly. Dr Siegen's experience has taught him that a 5 per cent. solution of oil of eucalyptus may be employed without any drawbacks. Dressings prepared with this solution may be left undisturbed for four or five days, whilst the 2 per cent. solution dressings remain antiseptic for three days. (*Deutsche Medizin Wochens.*, No. 30; *The Lancet*, September 4, 1880).—*The Practitioner*, November 1880.

CAYMAN'S OIL AND TURTLE OIL AS SUBSTITUTES FOR COD-LIVER OIL IN CONSUMPTION.—Dr A. C. Heffenger, Passed Assistant-Surgeon, U.S. Navy, in a communication to the *Boston Medical and Surgical Journal*, 23d September 1880, states that in northern Peru, especially in the Chira valley, the oil from the *Crocodilus palpebrosus* and *Crocodilus trigonatus*, as obtained directly from the reptile, is used freely in consumption and cachexiæ with most satisfactory results. It has almost entirely superseded cod-liver oil, being thought more nourishing and palatable. It is given in tablespoonful doses after meals for long periods. On the island of Mauritius turtle oil has been largely used with similar success.—*Medical and Surgical Reporter*, October 9, 1880.

TASTELESS COD-LIVER OIL.—Dr Penteves, in *la France Médicale*, recommends, in order to render cod-liver oil tasteless, to mix a tablespoonful of it intimately with the yolk of an egg, add a few drops of essence of peppermint and half a tumbler of sugared water, so as to obtain a *lait du poule*. By this means the taste and characteristic odour of the oil is entirely covered, and the patients take it without the slightest repugnance. Besides the oil being thus rendered miscible, as the water in all its proportions is in as complete state of emulsion as the fats at the moment they penetrate the chyle vessels, consequently absorption is better assured.—*Medical and Surgical Reporter*, October 9, 1880.

DISGUIISING THE TASTE OF THE BROMIDES.—The *Canada Medical Journal* says that the bitter taste of the bromides is easily overcome by giving 3 drachms of simple syrup with each drachm of the bromide. The 3 drachms of syrup, if properly made, should contain about 150 grains of sugar. This completely alters the taste, giving it the agreeable nutty flavour, not unlike cocoa-nut milk if largely diluted. Children take it with avidity. It is a boon to epileptics and others who have to persevere in large doses of the bromides.—*Medical and Surgical Reporter*, October 23, 1880.

THE VALUE OF VARIOUS DIURETICS.—Dr Maruel, in a paper recently published in the *Bulletin de Thérapeutique* on the different

diuretics, arrived at the following conclusions:—Nitrate of potash uncertain with respect to the quantity of fluid, increases the amount of solids eliminated in a marked degree. The most active doses seem to be from 4 to 6 grains (60 to 90 grains). Chlorate of potash, less active than the nitrate as regards the solids, acts more on the quantity of water, which it increases considerably. Acetate of potash is uncertain both as to water and solids. Iodide of potassium seems to diminish the urinary secretion. Salicylate of soda, uncertain as to the water, increases the amount of solids. Of the three vegetable substances experimented with, digitalis, colchicum, and squill, the first alone is truly diuretic. It increases at once the amount both of water and of solid matters. Tincture of colchicum is almost without action on the urinary secretion. The same holds good respecting tincture and oxymel of squill, which were remarkable for their great diversity of results. Altogether the author does not believe much in diuretics.—*Medical Press and Circular*, November 3, 1880.

PERISCOPE OF OTOTOLOGY.

By DR KIRK DUNCANSON, Surgeon to the Ear Dispensary, 6 Cambridge Street; Assistant-Surgeon, Eye Infirmary; Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

ON THE POST-MORTEM EXAMINATION OF THE EAR, AND THE FREQUENCY OF DISEASE IN OR NEAR THE TYMPANUM. By David Foulis, M.D., etc., Pathologist in the Glasgow Royal Infirmary.—At a meeting of the Glasgow Pathological and Clinical Society, held in March of this year, Dr David Foulis, Pathologist to the Glasgow Royal Infirmary, read a paper describing, at the same time demonstrating, his method of examining the middle ear in his ordinary post-mortem examinations. He refers to various authors' instructions for the more minute dissection of the organ of hearing in cases where special attention is directed to it from previous disease or the purposes of the aural surgeon. He quotes, amongst others, the names of Toynbee, Orth of Berlin, Lucæ, and Von Tröltsch, whose directions, given in their writings, are, if well carried out, sure to give one a satisfactory knowledge of the conditions of the parts. For the last thirteen months Dr Foulis has made use of a simple plan for splitting open the tympanum *in situ* in his usual post-mortem examinations. "When the skull has been opened, the brain removed in the usual way, and the dura mater torn off the base, the eminence caused by the superior semicircular canal on the upper surface of the petrous bone is in the great majority of cases quite distinct, and in those in which it is less well-marked there is still sufficient indication of it to guide the chisel. The incision is made with the ordinary post-mortem chisel along the outer margin of the eminence, in an antero-posterior direction parallel to the sawn edge of the skull, and perpendicularly to the

anterior surface of the petrous bone. A smart blow or two with the mallet is sufficient to drive the chisel through the bone and to detach the inner part of the petrous bone, which may then be levered or pulled further towards the middle line of the skull, so as completely to open up the tympanum. On the outer side the membrana tympani is left intact, with the malleus and incus; while on the loosened piece of petrous bone are to be seen the stapes and the parts forming the inner wall of the tympanic cavity. These parts having been examined, the loosened petrous fragment may be torn out, and by a further splitting up with the chisel the state of the cochlea and semicircular canals can be ascertained in an approximate way. The whole procedure need not occupy more than a minute or two, and after a few trials the tympanum can be opened with perfect accuracy.

“Following this plan, I have examined the ears of 112 bodies, with the result that in 17 cases definite changes have been detected in or near the tympanic cavity. A very brief summary of these 17 cases will show the nature of the lesion and its relation to other diseases in the bodies. I give them in the order in which they occurred:—

“1. Stricture of urethra; peritonitis; lining of right tympanum highly injected, and a thin purulent fluid in the tympanic cavity.

“2. Disease of knee-joint; abscesses in the cellular tissue of the thigh; both tympanic cavities full of muco-pus.

“3. Phthisis pulmonalis; tubercular ulceration of bowel; lining of both tympana highly injected, and mucus in both; lining of right tympanum coated with a layer of soft gray lymph.

“4. Fracture of skull, clavicle, and ribs; fracture of right petrous bone; right membrana tympani torn; right tympanum full of red blood-clot; left ear normal.

“5. Tubercular peritonitis; semicircular canal of left ear seen to be nearly obliterated, and the petrous bone very dense and flattened; tympana normal.

“6. Fracture of left side of skull; left auditory meatus full of cerumen; left tympanum normal; right tympanum full of pus.

“7. Phthisis pulmonalis; recent pleurisy; left middle ear full of muco-pus, the bone near it dense and ivoryed, the ossicles destroyed; the membrana tympani perforated; right middle ear normal.

“8. Tetanus; lining of both tympana injected.

“9. Phthisis pulmonalis; pus in right tympanum.

“10. Wound of scalp; erysipelas of left side of scalp; stricture of urethra; hypertrophy of heart and bladder; chronic nephritis; right ear normal; left tympanum full of pus, membrana and lining injected, of a dull purple colour; no wax in the meatus externus.

“11. Pericarditis and pleurisy from exposure to cold; lining of right tympanum injected.

“12. Old softening in corpus striatum; lining of both tympana injected, and the ossicles matted together.

"13. Bronchitis and emphysema; lining of both tympana deeply injected.

"14. Sarcoma of leg; amputation; secondary sarcoma of lung; pus in mastoid cells on right side.

"15. Wound of face; erysipelas of right half of scalp; lining of right middle ear highly injected, and right tympanum full of viscid mucus.

"16. Erysipelas of scalp; mucus in right tympanum, and its lining injected and velvety.

"17. Phthisis pulmonalis; pus in mastoid cells and in both tympana; no injection of lining of tympana.

"The numbers are, of course, too small to allow very definite conclusions to be drawn from them; but they indicate that serious disease of the ear may be in progress without attracting attention, for in most of the cases recorded here no suspicion of ear disease was entertained. Then, again, the frequency of the ear complications is a little startling. Further study can alone decide whether the percentage given (fifteen per cent. nearly) is usual; but, *a priori*, one would not suppose that one in seven of all persons dying had inflammation or other abnormal condition of the ears. Apart from the series of 112 hospital cases, I have had opportunities of inspecting the inner ear in a number in private practice, with practically the same results as to relative numbers.

"Of the affinities of otitis, etc., the seventeen cases given tell, of course, but little. Five of them were examples of tubercular disease of the lungs or other organs, though in no case were miliary tubercles visible in the tympanic mucous membrane. Three cases of erysipelas of the scalp came to the section-table during the year, each of them complicated by an extension of the inflammation into the inner ear of the side on which the erysipelas was most marked. This would be an important point to attend to in the treatment of that condition of the scalp with a view to early evacuation of mucus or pus pent up in the tympanum. It is also worth noting that three instances are recorded in the list of inflammation of serous membranes and joints coincident with acute otitis.

"The object of this paper, however, is to insist on the propriety of regularly including the ear in post-mortem inspections, and to indicate a means of doing this quickly and fairly accurately, even in the course of a hurried necropsy, without causing any disfigurement. The cases in which the ear is the main object in the inspection I would deal with after the manner recommended by Toynbee and other aurists, for in splitting the petrous bone, as above described, something of the integrity of the part must be sacrificed, more especially as regards the joint between the incus and stapes. But when the ear is a subordinate factor in the case, the method which I use gives a very fair insight into those lesions which have a more direct bearing on the cause of death of the patient."

Agreeing with the conclusions to which Dr Foulis has come, we have given his own words, and we humbly endorse his recommendation to all who have the opportunity of making post-mortem examinations.—*Brit. Med. Jour.*, 16th Oct. 1890, p. 619.

CHOLESTEATOMA OF TEMPORAL BONE.—The patient, aged 58, as the result of caries of the petrous bone from tympanic inflammation, developed an abscess in the right temporal lobe of the brain, over the diseased bone, from which he died. The autopsy is given in full, but the chief points of interest are that the whole of the interior of the petrous bone, except the labyrinth, was converted into a large cavity filled with cholesteatomatous masses, the external osseous shell remaining outside of these being sclerosed. Microscopic examination of the masses showed necrosed epidermic cells, some with and some without nuclei; between these were the irregular, round-cornered, lustrous corpuscles which have been described by Virchow and Lucaë, with small plates of cholesterine. The thickened mucous membrane from the tympanum showed a thin layer of yellowish epidermis, beneath which were the Malpighian cells, partly extending into the mucous membrane in undulating lines, partly investing papillary prominences of the mucous membrane. The mucous membrane itself was infiltrated with numerous round cells, and had large vessels. Its tissue stained quickly with iodine, while the Malpighian cells and epidermis remained uncoloured. This epidermoid metamorphosis of the epithelium of the mucous membrane has already been described by Wenot and Schwartze. The case, without doubt, belonged to those in which, “during a chronic purulent otitis media, the normal epithelium of the mucous membrane of the drum cavity, the mastoid antrum, and the mastoid cells undergo the above-mentioned metamorphosis; the stagnating masses of epidermis are constantly increased by new depositions, and exert, partly by pressure, partly by their products of decomposition, a continuous inflammatory irritation, perhaps also a direct chemical influence, on the surrounding bone. Then a partly sclerosing, partly rarifying otitis occurs, and under favourable conditions the bone is perforated. (H. Steinbrügge).—*Archives of Otolaryngology*, March 1880.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Lecturer on Diseases of the Skin,
Edinburgh School of Medicine.

ON THE MANAGEMENT OF INFANTILE ECZEMA.—A reprint of a paper read by Dr Bulkley before the Medical Society of the State of New York contains a number of excellent hints on how to deal with eczema in infants or children under five years old. Though many infants affected with eczema are apparently healthy, yet an

exceedingly careful medical examination will always discover something to be corrected besides the disorder of the skin. In the mother of an infant being nursed who is affected with eczema there is often something wrong with the digestion, or the secretions or excretions are not healthy, and this reacts on the child. Dr Bulkley does not allow mothers nursing eczematous children to take any fermented liquors, and regulates the amount of tea taken. He regards milk as the best food to form milk, and causes it to be used freely, with frequently the addition of an alkali. Often the milk is too poor, and the mother requires tonics, and both she and her child cod-liver oil. The diet of the child is not seldom erroneous; in children under one year too much starchy food is being given; in other cases too much sugar, or a little of everything, including tea. When there is constipation a grain of calomel is useful in the commencement of treatment, followed by lactopeptine in suitable doses, given after each meal or as necessity indicates. Animal food may be given too largely in the desire to avoid too much starchy matter. As to medicines, in the full, ruddy-faced child, with dry, red, eczematous surface, very itchy, or perhaps exuding considerable serum when washed or scratched, light purgatives and alkalies are followed by amelioration of the itching, lessening of cutaneous congestion, and subsidence of the disease, while tonics would aggravate it. In pale, strumous-looking children, in whom the discharge tends to crust up into yellow masses, benefit will be obtained by iron, arsenic, and cod-liver oil at once. Even in these, however, discrimination must be used. Bulkley prefers zinc ointment made with cold cream instead of lard, as the former has little tendency to become rancid, and uses it of the strength of 60 or 30 grains to the ounce, and this he uses extensively. He also employs a weak tar ointment, made by diluting ordinary tar ointment with three times its quantity of cold cream, and adding half a drachm of oxide of zinc. Thus made it is a valuable antipruritic, and can be applied even to a very young child. Ointments should be applied spread on cloths, since much harm is done, especially to an exuding surface, when rubbed on. Frequent washings are to be avoided, and the kind of soap used attended to. Poultices, also, are seldom advisable. The part should be wiped, or an alkaline, borax and starch, bath used without soap, and the ointment laid on immediately after the part has been dried.

ECZEMA DIGITORUM.—Dr Finny gives an excellent account of this most troublesome form of eczema, too often very cursorily noticed in the text-books. In contrast to eczema of most other parts, where it selects the flexor surfaces, here it is most commonly situated on the backs of the fingers, or more rarely—and this only on the thumb and little finger—all round the front and back. When, however, its cause is some local irritant, or when it is but

part of general eczema, it is also found on the backs of the hands and on the wrists. Minutely vesicular at first, as it becomes chronic this character ceases, unless, perhaps, at an extending margin; the skin becomes infiltrated, dense, and thick, soon followed by stiffness of the joints and fissuring of the skin over them. It is now also slightly scaly at its margins. Though generally symmetrical, one hand is worse than the other. Itching is prominent and severe, and the disease is very chronic, recurring again and again. One form very common in winter and spring, met with in nurses and those engaged much in washing, is easily cured. This attacks the distal phalanges close to the nails, producing painful and deep fissures. This can be successfully treated by frequently coating the fissures and ends of the fingers generally with a solution of guttapercha dissolved in chloroform. This smartes when applied, but soon gives the greatest relief, and permits the patient to continue her work. The majority of cases of eczema digitorum were over thirty; those under thirty conformed to the type of scrofula; those above it often were gouty. Others were overworked and anxious, and to them pure phosphorus did much good. As to diagnosis, the exclusion of scabies is the only important point, and this requires care. Dr Finny divides the treatment into four heads—1. Internal medication; 2. Diet; 3. Washing; 4. Local treatment. Eczematous parts are, as a rule, too often washed. Instead of soap, he recommends oatmeal tea, or rain or soft water, with the addition of one tablespoonful of glycerine and two of finely powdered starch to the pint. In the early and acute stage soothing measures and ointments must be employed. When induration exists he finds indiarubber finger-stalls, fitting moderately closely, to cause rapid improvement; but these may make the finger hot and throb, hence many refuse to persevere in their use. For the itching he finds the following ointment answer well:—

R Cremonis frigid, ℥i.
 Ung. picis, ℥iii.—℥vi.
 Zinc. oxid., ℥ii.
 Hydrarg. ammoniat., ℥i.
 Vaseline ad ℥ii. Ft. Ung.

—*Dublin Journal of Medical Science*, Oct. 1880.

ECZEMA AND ITS RELATIONS.—Dr Bethune very appropriately calls this a rambling sketch; it contains a little of everything, including eczema. He has such faith in Mr Wilson's benzoated zinc ointment that he keeps it in three places in his house, and applies it at once when itching is felt, for Dr Bethune is the patient whose personal experiences we are favoured with. The most, if not the only, suggestive part of the paper is the last paragraph, the ladies' postscript:—"I was consulted by a man, aged forty, from Abbotsook County, Maine. He reminded me that nine

years ago his wife had been under my care for an affection of the eyes, had recovered, and had continued well. A year ago, he said, he was attacked with disease of the eyes, which had recurred from time to time, and his sight was much impaired. He had consulted an eminent specialist in Bangor, and another in Portland. He then came to Boston and took the advice of another distinguished specialist, and, not satisfied with this, went to the Eye Infirmary. I asked him why he came to me. 'Because,' said he, '*you were the only one of the five who asked a single question as to the general health.*'" — *Boston Medical and Surgical Journal*, August 5, 1880.

THE USE OF SULPHUR AND ITS COMPOUNDS IN DISEASES OF THE SKIN.—This subject affords Dr Bulkley opportunity for many practical observations, some of which we may summarize. He finds the reputation which sulphide of calcium has obtained in the treatment of skin lesions attended with suppuration quite sustained. In acne it is chiefly serviceable in those cases which have a good deal of a pustular element, either in the acute small suppurating pimples of youth or the larger masses of acne indurata. It is also the best remedy in hordeolum; stytes often wither under it, and cease to be produced. In boils it improves the state of the system, and lessens the number which might otherwise have been expected to form. In anthrax and suppurating bubo it shortens the attacks, and also benefits to a certain extent true non-parasitic sycosis. He prescribes it in pill, one-quarter of a grain, made up freshly with extract of gentian, given four times a day on an empty stomach. Some specimens of the sulphide are much more active than others, and this is of importance, for the less active may seem inert. Startin's mixture with the following formula he has found most potent in reducing the cutaneous congestion in erythema multiforme, erythematous eczema, and urticaria:—℞ Magnes. sulphat. ℥i., ferri sulphat. ℥i., acidi sulphurici, dil. ℥ii., tinct. gentian ℥i., aque ℥iii. M. Teaspoonful after eating. He thinks in this it is the *combination*, in which the sulphur element plays a very important part. Another sulphur compound used externally forms a mildly stimulating application for acne of much value, and which may be used even on inflamed faces. It is composed thus:—℞ Potass. sulphuret, zinci sulphatis, āā ℥i., aq. roseæ ℥iv. The ingredients are each dissolved in one-half the water, forming clear solutions. They are then mixed, and a white precipitate takes place, which is to be shaken up and allowed to dry on the face. 'Sulphur is of value internally, as it acts upon the liver and intestinal canal in cases of eczema of the anus, and in many cases of other skin disease which are accompanied with piles. In its compounds it is of value in diseases in which the production of pus is a feature, as in the use of sulphide of calcium, sulphuric acid, and hyposulphite of soda in boils, acne, carbuncles, etc. Locally the main use of sulphur is in the treatment of the parasitic diseases.

animal and vegetable, and it is also of service in acne. It is a local *stimulant*, and, if incautiously used, gives rise to *irritant* action, and is entirely inappropriate in acute inflammatory skin affections, and useless in hypertrophies, atrophies, and new formations. Sulphur vapour-baths and mineral water containing sulphur should not be used indiscriminately in skin affections, but are of value in parasitic diseases, and also in those in which a rheumatic element is strongly pronounced."—*Archives of Dermatology*, July 1880.

PERISCOPE OF OPHTHALMOLOGY.

A NEW METHOD OF PERFORMING SCLEROTOMY.—Galezowski (*Rec. d'Ophth.*, July) describes a method of performing sclerotomy which he has employed in six cases. The operation as performed by Wecker, Quaglino, and others, does not appear to have been hitherto more successful than iridectomy, and has frequently altogether failed in arresting the glaucomatous process. Galezowski believes that this want of success is owing to the method not fulfilling permanently the most important indication, viz., the re-establishment of the means of filtration from the anterior chamber. On the contrary, the cicatricial tissue formed must tend to block up the channels through which filtration is effected. He considers that in order to make the opening up of the angle of the anterior chamber more complete, it must be attacked from several different directions. His method, to which he gives the name of *scleriotomie cruciale*, is performed as follows:—A Grafe's knife is introduced through the sclerotic at about 3 to 4 mm. from the border of the cornea, pushed forward towards the anterior chamber, and the sclerotic and cornea incised from behind forward to the distance of 1 cm.; this is repeated at a point opposite the first incision, as well as at two points at right angles to it; the section is thus made in four situations. Eserine is used immediately after the operation, and a compress applied to the eye. The result of this method has been satisfactory in his hands, especially as compared with iridectomy on the other eye. The tension is so much reduced by it that it is not suitable for cases of hæmorrhagic glaucoma; indeed, in one case it failed owing to hæmorrhage, and the eye had afterwards to be removed.

CONGENITAL DAY-BLINDNESS.—The principal features of a group of cases described by Nettleship (*St Thomas's Hosp. Rep.*, vol. x.) under this heading are the following:—Nystagmus, dating either from birth or early infancy, more or less amblyopia, absence of any pigmentation, or atrophy of the retina, and marked, sometimes complete, colour-blindness. The most peculiar symptom is, however, the improvement which takes place in vision in a dull light. This is probably owing to the fact that the vision is worst at the centre. This affection appears to be hereditary: 16 cases occurred in 5 families with 35 children.

ANÆSTHETIC EFFECT OF COLD ON THE CORNEA.—Oppenheimer (*New York Med. Journal*) recommends the use of frequent direct applications of iced water to the cornea in cases of keratitis with photophobia. The lids are held open, and the iced water dripped from a sponge on the cornea. This he considers preferable to V. Grafe's method of immersing the head of the patient in cold water. Its action seems to be both anæsthetic and astringent, possibly also antiseptic.

GONORRHOICAL IRIDO-CHOROIDITIS.—Kipp (*New York Med. Rec.*) records three undoubted cases of this affection, the existence of which is still doubted by some authors. He concurs in the opinion of Forster, that if in every case of iritis an examination be made of the urethra, or the history of the case carefully inquired into, this disease will be found to be not uncommon. Mackenzie believed it to be caused by metastasis. Neisser has found micrococci circulating in the blood in such cases. In the three cases referred to a urethral discharge was still present when the irido-choroiditis began; in two it was preceded by inflammation of one or more joints, there was great pain in and around the eyes, and the vision very much impaired. The field of vision remained intact. The iris was much swollen and discoloured, with a fibrinous exudation in the aqueous chamber.

DIPHThERITIC OPHTHALMIA.—In a paper on this subject (*St Thomas's Hosp. Rep.*, vol. x.) Nettleship, although considering it advisable to retain both the terms diphtheritic and pseudo-membraneous ophthalmia, as first used by V. Grafe, gives it as his opinion that they are only different degrees of the same inflammatory process. Although diphtheritic ophthalmia is met with during an epidemic of diphtheria, still this appears to be by no means always the case. Patients suffering from granular lids appear to be especially prone to this form of ophthalmia. Diphtheritic ophthalmia is more common in North Germany than in other countries, although probably this difference in geographical distribution has been overrated. A number of cases which have come under the author's own observation conclude the paper, which also gives an admirable *résumé* of the British and foreign literature on the subject.

Part Fifth.

MEDICAL NEWS.

THE GLASGOW HOSPITAL AND DISPENSARY FOR DISEASES OF THE EAR.—On Wednesday, 27th October, this institution was formally opened by its President, Dr Andrew Buchanan, late President of the Faculty of Physicians and Surgeons, in the presence of a number of its patrons, directors, medical staff, and well-wishers.

The premises are excellently adapted for the purpose, and are converted into a comfortable and admirably equipped hospital, the different wards containing fifteen beds. There are also a lecture and consulting room, a waiting-room for patients, a parlour, a dining-room, a matron's room, kitchen, laundry, etc., all betokening great forethought on the part of the management. A special feature in the establishment is the telephone which connects Dr Cassells' residence with the institution, so that the latter gentleman is always kept informed of what is going on in his absence. Besides the matron and a dispenser of the various medicaments, the surgeon is aided in his labours by two clinical assistants, so that the greatest attention can be given to every individual case. The Hospital is always open for urgent cases, and patients who desire to be admitted have to communicate with the matron. Out-door patients are seen on Tuesdays, Wednesdays, Thursdays, and Fridays, from 2 to 4 P.M., by Dr Cassells and his assistants.

SCOTTISH MIDLAND AND WESTERN MEDICAL ASSOCIATION.—The ninth annual meeting of the above association took place on the 8th October in the Religious Institution Rooms, Buchanan Street, Glasgow. Dr Loudon of Hamilton, the annual President, occupied the chair. After reading and approving the minutes of previous meeting, the election of office-bearers was made, and Dr Stewart of Greenock was chosen President for ensuing year; Dr Goff, Bothwell, Treasurer; and Dr Crawford of Hamilton, Secretary, *vice* Dr Lennox. The former members of Council were continued. The financial statement was found highly satisfactory. The President read an able and thoughtful address on the advantages of a full classical education to young men entering the medical profession, as regards mental discipline and social status, expressing in lucid terms the desirability of each graduating in arts before commencing the professional curriculum. An animated discussion followed the delivery of the address—some agreeing with Dr Loudon, and others inclining to the view that preliminary scientific studies and French and German were equally beneficial as intellectual gymnastics, and more useful to the future career. One gentleman remarked that he was never conscious of any advantage from his classical education till a few months ago, when he was enabled to hold conversation with a monk in the Hospice St Bernard, between whom and him Latin was the only language in common. The attention of the Association was called to the vexatious and gratuitous labour entailed on the medical profession by the action of school boards, exacting medical certificates of illness for children who absented themselves from school, often under slight pretexts. The matter was remitted to the Council to take the necessary measures for redressing the grievance. After transacting the remaining portions of business, the members adjourned to the Bedford Hotel, where an excellent dinner was well served,

and the evening spent in great enjoyment. Some amusement was caused by a song composed and sung by Dr Boyd, Slamannan, which was accepted as giving a lively account of the germinal origin of an association which has now expanded and developed so as to include the *élite* of the rural practitioners of the central counties of Scotland, and which is calculated to increasingly promote the interests and harmony of a class equally meritorious and important:—

THE MEDICAL MADRIGAL.

AIR—“*Villikens and his Dinah.*”

A meeting of doctors, some grave and some gay,
Assembled in the Clarence on one winter day ;
The cause of our meeting, they said, this it is,—
That our fees are too low, while others *is riz*.

Our keep is much dearer and mounting alway ;
Our horses devour us in oats and in hay ;
Our drug bill, it eats us up, body and sleeves ;
Books and instruments cost us what no one believes.

Between night and day calls we toil eight days a week,
Of rest or diversion we never need speak ;
For such extra devotion it's right folks should pay—
We ask an advance of half-farthing a day.

(*Chorus of doctors, in a plaintive tone.*)

Tal looral al looral, tal looral al lay,
Tal looral al looral, lal looral al lay.

The iron and coal masters next had their say :
“The doctor works hard for inadequate pay ;
Fiery gas, falls from roof, not to mention the fear,
Cause the men both to look and to feel very queer.

“With every precaution mishaps will occur,
Hurt men, sickly wives, and their weans would demur
If the doctor weren't ready at every one's call,
To serve, and to save, and to soothe one and all.
We conclude we should aid, without any delay,
That the motion be granted—half-farthing a day.”

(*Chorus of iron and coal masters, in a dignified tone.*)

Tal looral, al looral, lal looral, al lay,
Tal looral, al looral, lal looral, al lay.

Mr MacD. wouldn't hear of't at first, and he says,
“Them doctors are safe with their twopenny pays ;
All office off-takes are insult and abuse ;
Deductions for medicals—why, where's the use ?
Send for 'em as you want 'em, like lords and like lairds,
If they ask for more tin, you can laugh in their beards.”

(*Mr MacD. here singeth in a vehement tone.*)

Tal looral al looral, tal looral al lay,
Tal looral al looral, tal looral al lay.

But the cream of the business, the verdict at stake,
Was the view of the matter John Miner should take ;
A petition was sent to him right courteouslie :
Line by line, word by word, read it over did he.

Quoth John, " An advance we now and then claim ;
 What we seek for ourselves, let's give others the same.
 My doctor's my friend aye, by night and by day ;
 Honest man, he maun get his hauf-faurden a day ! "

(Chorus of miners, in a cordial tone.)

Tal looral al looral, lal looral al lay,
 Tal looral al looral, tal looral al lay.

OBITUARY.

DR JAMES LUMSDAINE BRYDEN, SURGEON-MAJOR in I.L.M.'s
 INDIAN ARMY.

WE have just learned with deep regret of the death, at Norwood, London, of Dr James Lumsdaine Bryden, Surgeon-Major in I.L.M.'s Indian Army. Dr Bryden was a native of Edinburgh, and must have been about 47 years of age. He was educated at the High School, and studied medicine at the University of Edinburgh, where he took the degree of M.D. in 1855. He gained a gold medal for his thesis upon sugar in the liver, which was at that time a new discovery of Dr Claude Bernard. He gained by competition at Leadenhall Street the post of Assistant-Surgeon to the East India Company, standing second on the list of competitors. Choosing the presidency of Bengal, he arrived at Calcutta in December 1856. During the Indian mutiny he escaped from Mudlairs Civil Station, on the Nerbudha, to Bombay, whence he returned to Calcutta. He served with Jung Bahadur's Nepaulese force at the siege of Lucknow, and accompanied the captive Emperor of Delhi from the upper provinces to Calcutta. After being some years the surgeon to a civil station, he was appointed statistical officer attached to the sanitary commissioner with the government of India, and soon made himself very well known by his reports on the diffusion of cholera, which have been often reviewed in this journal. His statistical studies, based upon returns from the whole Indian army and the jails, threw great light upon the periodical migrations of this disease. He showed that from its endemic haunts in Lower Bengal cholera invaded the North-West Provinces at regular intervals, often appearing at the same localities on the same day of the months as on the preceding year. He considered cholera to be an air-borne disease, which, though occasionally contagious, was not dependent upon contagion for its spread. His inferences met with opposition, but his command of information, the acuteness of his intellect, and the breadth of his views, ensured for him a wide attention. The success of some of his predictions as to the appearance of cholera in particular localities looked as if he possessed the inspiration of a prophet; but they were based upon a careful scrutiny of the records of the past, and a conviction that cholera in its spread obeyed certain laws which could be accurately laid down. Medical science is also indebted to him for many valuable facts and deductions

brought out in the late blue-books of the "Vital Statistics of the Bengal Presidency."

Having his office at Simla, and only descending into the plains of India during the colder months, it might be thought that he would escape from the diseases of tropical climates. Nevertheless, on his return to this country about four years ago his health was evidently somewhat affected. It is much to be regretted that he did not at that time take his pension and retire; but life in this country was not suited to his active mind and restless temperament. He returned to India, and the Government showed their esteem for his services by making him Registrar-General. Bad health, however, prevented him enjoying the prize which he had gained with so much toil and trouble. He landed at Southampton in the beginning of September, affected with liver disease, from which he died on the 18th of November.

Dr Bryden was a man of great ability and extraordinary acuteness. He had naturally a good constitution, and was very temperate and regular in his habits. Of a sensitive disposition, hostile criticism caused him more than usual uneasiness, but he was a warm and faithful and constant friend.

He married the daughter of Dr Brougham, the Physician-General of the Bengal Presidency, and leaves his widow, two children, and an only sister to mourn his untimely death.

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